

Commercial Refrigeration & Air Conditioning

November 1957



UNIVERSITY MICROFILMS
313 N FIRST ST
ANN ARBOR MICH

RIF



What happened when

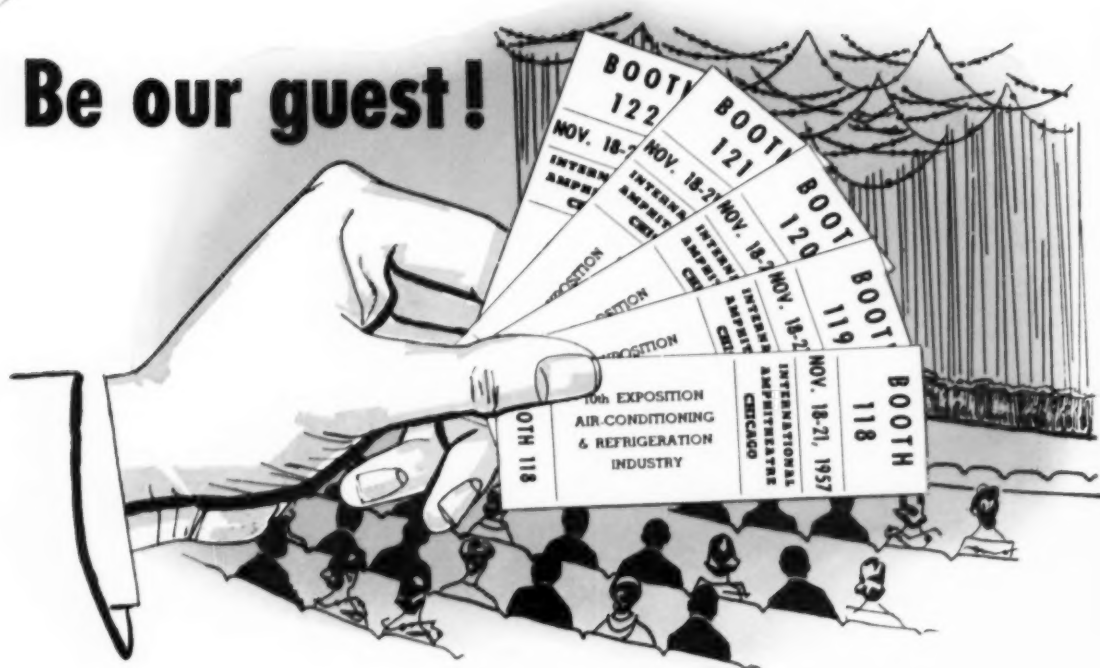
**I tried to buy
year-round
air conditioning**

*For the full story turn
to page 67*



Circulation now over 30,000

Be our guest!



front-row tickets to a top-flight show...

When the curtain goes up on the ALL-INDUSTRY EXPOSITION at Chicago, you can expect a stage-full of the most exciting developments in refrigeration equipment. And we're confident you'll applaud the big Cope-

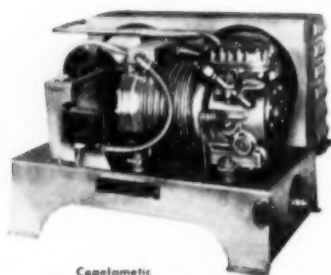
land exhibit . . . the complete line of top-quality motor-compressors, compressors and condensing units that guarantees perfect performance of your refrigeration and air conditioning.

SINCE 1918

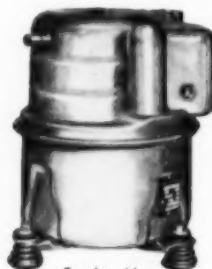
Copeland
REFRIGERATION CORPORATION

Manufacturers of the heart of America's
finest commercial refrigeration and
air conditioning

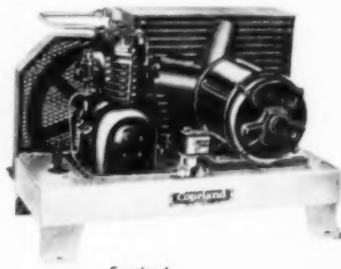
Sidney, Ohio



Copelametic
Accessible Hermetics



Copelaweld
Welded Hermetics



Copeland
Belt-Driven

Circle No. 1 on Reader Service Card

Circle No. 3 →

**READY
TO
INSTALL
OR
SERVICE
IN
SECONDS!**

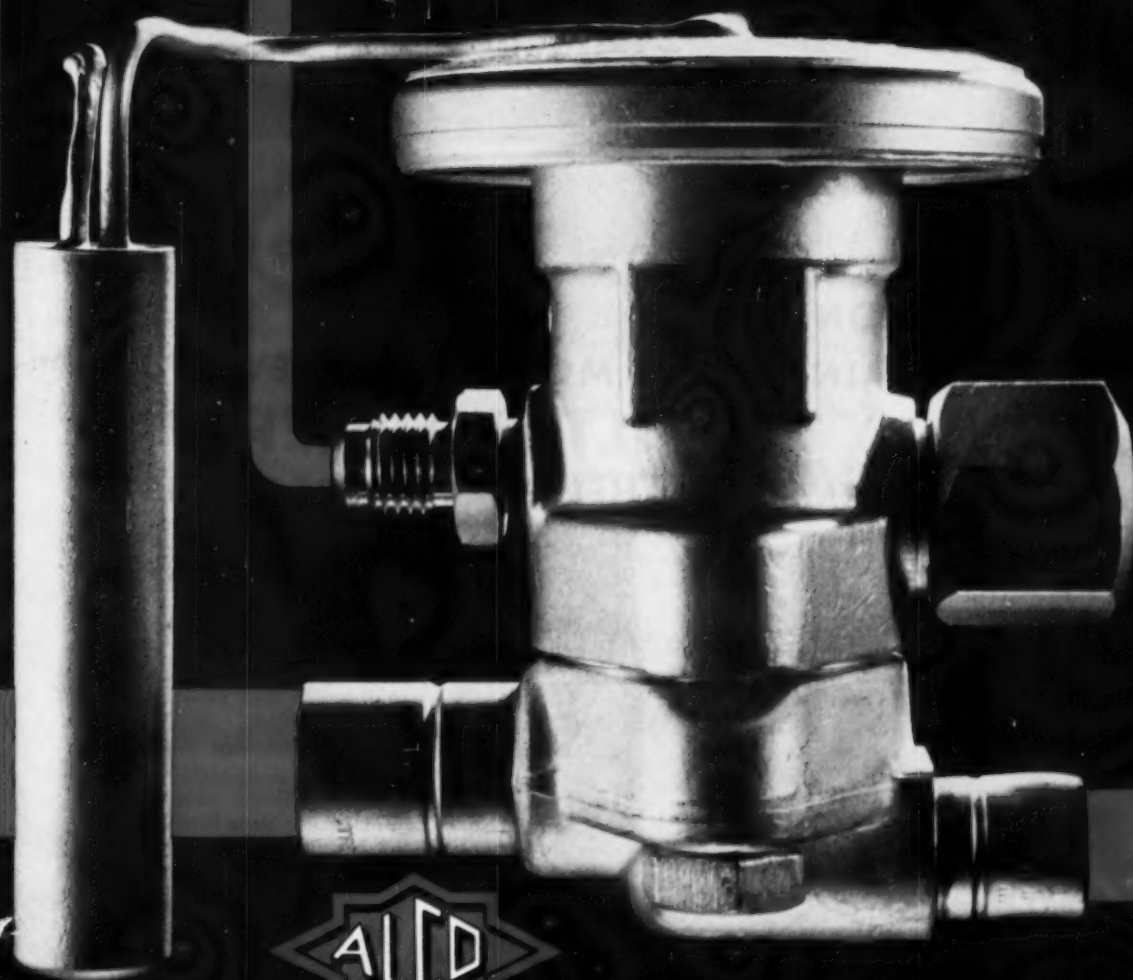
ALCO "T" SERIES THERMO VALVES

They come apart in
the line.

No torch, saw or
tube cutter needed!

You save time and trouble!

**SEE THEM AT OUR
BOOTH 444
AT CHICAGO, NOV. 18-21.**



ALCO VALVE CO.
843 KINGSLAND AVENUE • ST. LOUIS 5, MO.

**DO YOU PRIDE YOURSELF
ON KNOWING A GOOD THING
WHEN YOU SEE IT?**



**REFRIGERATION MEN
ARE WELCOMING TMC MOLECULAR SIEVE
FILTER-DRIERS
WITH OPEN ARMS... and HERE ARE THE REASONS**

Tube Manifold Engineers saw the advantages of LINDE Molecular Sieves over 4 years ago. They tested . . . they designed . . . they proved the radically improved drying and filtering ability of TMC Molecular Sieve Filter-Driers.

And now they are being approved throughout the air conditioning and refrigeration industry.

- BECAUSE they are up to 19 times as efficient.
- BECAUSE they are 10 times as small. Only 4 sizes handle 1/4 to 15 tons.
- BECAUSE they are not affected by oil and high working temperatures.
- BECAUSE they save space for manufacturers, wholesalers, installation and service contractors.
- BECAUSE above all, they save on first cost and maintenance costs.

Send for Questions and Answers Folder about these radically new TMC Molecular Sieve Filter-Driers made by America's largest manufacturer of liquid receivers.

**GET THE FULL STORY
at
BOOTH No. 727
AT THE CHICAGO SHOW**



TUBE MANIFOLD

CORPORATION

445 BRYANT STREET

Ludlow 7900

N. YONAWANDA, N. Y.

Circle No. 4 on Reader Service Card

Commercial Refrigeration & Air Conditioning

NOVEMBER 1957 • Vol. 14 • No. 11

Departments:

About People/18

As We See It/32

It's the Law!/48

Calendar of Events/59

Let's Talk Business!/65

Applications Manual/85

New Products/99

Useful Literature/114

Here's How/133

Opportunities/145

Index to Advertisers/146



• Copyright 1957 by The Industrial Publishing Corporation, Cleveland, Ohio.

• Accepted as Controlled Circulation Publication at St. Joseph, Michigan. Please return 3579 forms to 800 Canton Bldg., 812 Huron Road, Cleveland 15, Ohio.

65/How Do You Look to Your Customers?

Holding up a mirror to your merchandising activities can help you improve your operations, if you view the results with the proper perspective.

67/I Tried To Buy Year-Round Air Conditioning

If your residential air conditioning sales volume hasn't been satisfactory, this first-person report of one "buyer's" experiences may show you why.

76/Turn to Re-Heat

That's one solution to the problem of how to handle an old office building that seems to defy air conditioning.

78/Our Salesmen Spend Their Time Selling!

They don't make any layouts, they don't prepare any estimates, they don't supervise any installations . . . but they do turn in a whopping volume of commercial refrigeration business. This distributor tells you how it's done.

82/10 Guideposts to Sound Financial Operations

A suggested review of financial factors vital to your business success.

85/Importance of Insulation in Residential Cooling

87/On the Spot in 9 Minutes!

Effective use of two-way radio speeded the completion of this emergency call for commercial refrigeration service.

88/Cost Per Year Is the Key

. . . when it comes to determining the most practical system of air conditioning for any specific application. Here's a simple formula for finding it.

133/Proper Maintenance of Welding Equipment Pays Off

SPECIAL SECTION: 10th Exposition Air-Conditioning & Refrigeration Industry

92/Guide to Exhibitors at the Show

93/Plat of the Exposition Hall

95/Schedule of Show-time Activities

96/Programs of 6 Industry Associations



Low Silhouette cooling tower out of sight at street level

"Man-high" Binks 3-B series cooling towers let you make installations that are out-of-sight at street level. Maximum heights range from 6' to 7½' through the entire selection of frame sizes. Because of their low silhouette, 3-B cooling towers help preserve the clean architectural lines found in today's modern buildings.

Complete operation flexibility and capacity selection. There are 24 different cooling towers in Binks 3-B series—a wide range of refrigeration capacities. Individually powered blowers on multiple blower towers permit complete operation flexibility for most efficient cooling under varying load and weather conditions.

Whisper-quiet operation. Binks 3-B cooling towers operate so quietly they give you complete freedom in establishing their location. Put them adjacent to windows or in building wells, with complete confidence

that they will disturb no one. The squirrel cage blowers have only 1/3 the tip speed of equal capacity propeller fan units. Dynamic and static balancing also insure vibrationless operation.

Minimum maintenance. Blowers and motors are outside the tower—not in the moisture laden air stream. All panels are heavily galvanized. Out-sides of towers have two coats of aluminum paint. The insides are protected by a durable zinc chromate coating.

Send for complete data. Ask your Binks Branch Office, or write direct for a copy of Bulletin 477-A and 333. Binks engineers will be glad to answer your questions and help solve your particular cooling problems. There is no obligation.



7802



REPRESENTATIVES IN PRINCIPAL U.S. & CANADIAN CITIES • SEE YOUR CLASSIFIED



See Binks
NEW cooling tower line
... visit BOOTH 230

10TH EXPOSITION
Air-Conditioning & Refrigeration Industry
Nov. 18-21 • Chicago

Binks Manufacturing Company

3134-38 Carroll Ave., Chicago 12, Ill.



DIRECTORY

Circle No. 5 on Reader Service Card

Commercial Refrigeration & Air Conditioning |

published monthly by

The Industrial Publishing Corporation
812 Huron Road Cleveland 15, Ohio

IRVING B. HEXTER.....President
LESTER P. AURBACH.....Exec. Vice President
EDWIN M. JOSEPH.....Vice President
LEE HAAS.....Vice President

STAFF

THOM MUIR.....General Manager
THEODORE T. QUINN.....Managing Editor
JIM MCCALLUM.....Editor
RICHARD W. BRACKER.....Associate Editor
SCHOLER BANGS.....Western Editor
ALARIC MAUSSER.....Art Director
N. G. KISER.....Circulation Director

Franchise Circulation Department

Alan J. Kichler, General Manager; Ross Taylor, Franchise Manager; William Jerse, Production Manager; Ray Bingham, Copy Preparation.

SALES OFFICES

CLEVELAND 15 Superior 1-9622
Robert G. Joseph, Representative
■ 812 Huron Road, 8th Floor

NEW YORK 17 Murray Hill 7-3420
Lee Haas, Vice President
Joseph M. Dematthew, Representative
V. R. Stein, Administrative Assistant
■ 60 East 42nd Street, Room 836

CHICAGO 11 Whitehall 3-1655
Charles F. Geyer, Manager
Edgar D. Crilly, Representative
■ 520 S. Michigan Avenue, Room 704

LOS ANGELES 57 Dunirk 7-5104
Alan T. Cazier, Manager
William Mills
■ 672 S. Lafayette Park Place, Room 8

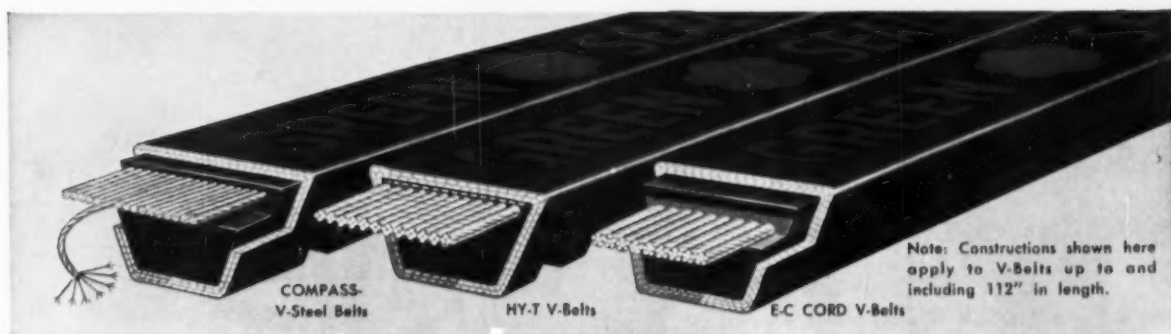
LONDON, S.W. 1, ENGLAND Victoria 2608
John A. Lankester, Manager
■ 31 Palace Street, Westminster

Subscription Rates: United States and possessions—\$5.00 per year, \$8.00 for 3 years; Canada—\$6.00 per year; Foreign—\$7.00 per year, except the United Kingdom. United Kingdom subscriptions £3.00 per year, payable in Sterling to our London Office. Single copy price, 50 cents. All subscriptions subject to individual acceptance by the publisher.

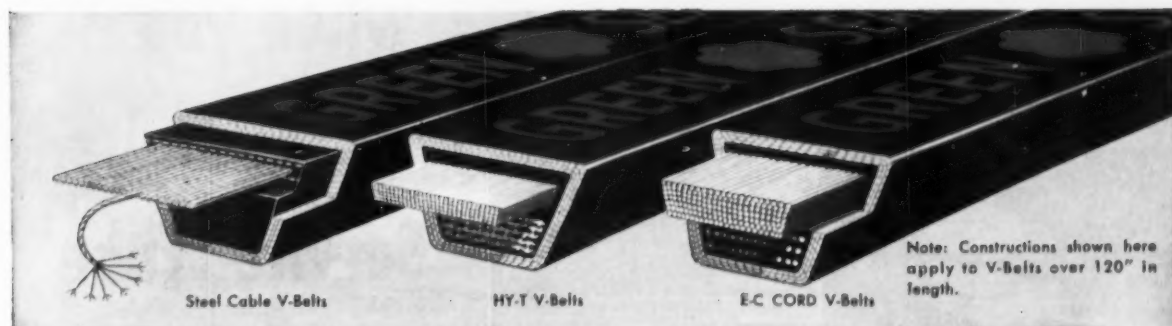
The Industrial Publishing Corporation also publishes:

AERONAUTICAL PURCHASING
APPLIED HYDRAULICS
FLOW
INDUSTRY & WELDING
MATERIAL HANDLING ILLUSTRATED
MODERN OFFICE PROCEDURES
OCCUPATIONAL HAZARDS
PRECISION METAL MOLDING
WELDING ILLUSTRATED

What's different about



V-Belts with the Green Seal?



Plenty—when you're belting multiple drives. For that Green Seal certifies the dimensional stability of every belt that carries it. There's no surer guarantee that every belt in a set will match every other one—perfectly. And that they'll *stay* matched no matter how long you stock them before installation.

So the dimensional stability of Green Seal belts is solid protection against "loafing," slipping, stretching, scorching and other mismatching troubles. And most of the credit belongs to the

belts' load carriers of airplane-type steel cables or Triple-Tempered (3-T) cord — Goodyear "exclusive" cord that's carefully tempered with Tension, Temperature and Time.

This unique 3-T process brings the synthetic cord to its point of greatest strength and stability. Result: the end of shrinkage in storage—plus greatest shock- and stretch-resistance in use. All of which assures you maximum, trouble-free horsepower hours at minimum cost. Why settle for less?

DIMENSIONALLY STABLE V-BELTS with the GREEN SEAL by

GOODYEAR
THE GREATEST NAME IN RUBBER

The Goodyear Tire & Rubber Company, Dept. 794, Akron 16, Ohio

Please send me complete information on what makes V-Belts with the Green Seal different from any others made today.

Name _____
Company _____
Street Address _____
City _____ Zone _____ State _____

Compass, E-C Cord, Hy-T, Green Seal—T. M. © The Goodyear Tire & Rubber Company, Akron, Ohio



**you get
the service
you want
when you
specify United
Service* Tube**



NOV. 18-21

However your order arrives — by phone, mail or telegram — your shipment starts immediately. It's here today ... gone today!

And check this new United Service Tube carton.

Punch-out handles (a) for easy carrying. Punch-out holes (b) makes it simple to remove from box or shelf.

Call, write or wire United for copper, brass and aluminum tube and wire.

**Water, Refrigeration and Automotive*



**UNITED WIRE
AND SUPPLY CORPORATION**

PROVIDENCE 7, RHODE ISLAND
FOR A PERMANENTLY UNITED
JOINT, INSIST ON PHOSON

Circle No. 7 on Reader Service Card



HIGH WORKING PRESSURE—500 PSI

LOOK AT THAT TRANSVERSE FLOW

LOOK! GRANULAR DESICCANT TOO

AN ENTIRELY NEW DESIGN

BRASS END CONNECTIONS—EASIER TO SEAL

NO FOOLING, LESS PRESSURE DROP

OH BOY! MICRONIC FILTRATION TOO

CERAMIC FIRED DESICCANT BLOCK

ABSO-DRY PRESSURE SEALED "THEY HISS & TELL"

See our Exhibit
BOOTH 669
10th Exposition
Air Conditioning &
Refrigeration Industry
International Amphitheater
Chicago Nov. 18-21.

"DRI-COR"...

a New Name — a Finner Filter-Drier

■ You can expect the best from Henry. Here's the new "Dri-Cor" Filter-Drier. It incorporates an activated ceramic desiccant block for micronic filtration in combination with granular desiccant for high efficiency drying with low pressure drop. Drying and filtering are properly proportioned.

Like other Henry Driers the "Dri-Cor" is

thoroughly reactivated and pressure sealed at the factory, through the exclusive patented Henry Abso-Dry process.

This assures maximum drying efficiency at the time of installation. See this new type Filter-Drier at the show. It is definitely a "must" for those who demand the best.

HENRY VALVE CO.

MELROSE PARK, ILLINOIS (Chicago Suburb)

Cable: Hevalco, Melrose Park, Illinois

VALVES, DRIERS, STRAINERS, AND ACCESSORIES FOR REFRIGERATION, AIR CONDITIONING, AND INDUSTRIAL APPLICATIONS



LISTED BY UNDERWRITERS' LABORATORIES, INC. UNDER RE-EXAMINATION SERVICE FOR MAXIMUM WORKING PRESSURE OF 500 PSI

Circle No. 8 on Reader Service Card

FRIGID IGLOO IS THE ONLY LINE!

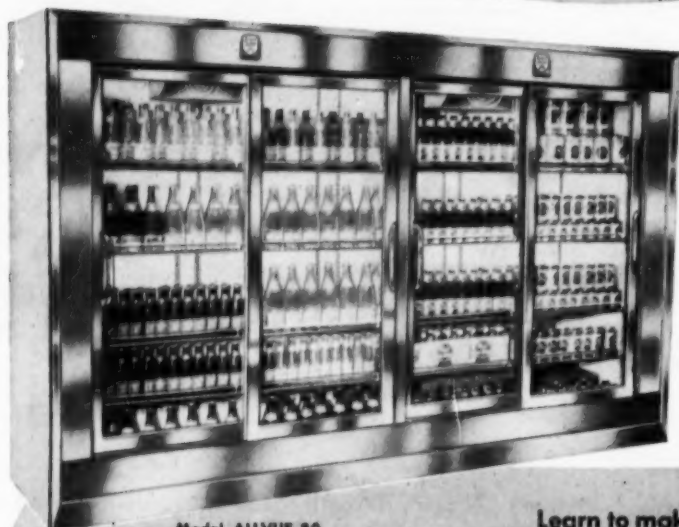
*with everything, yes everything for today's
Commercial Display Refrigeration Dealer!*

The World's Popular
line of
**DAIRY
and
BEVERAGE
WALL CASES**

Smartest looking,
Easiest selling
line of
**DELICATESSEN
and
BUTCHER
DISPLAY
CASES**

The HOTTEST new
line of
**COUNTER
HIGH,
FORMICA TOP
FULL VISION
DISPLAY
CASES**

Only complete line of
**BAKERY DISPLAY
and
WALL CASES,
BAKED GOODS
FREEZERS and
REACH-INS**



Model ALLVUE-80

The new Allvue Dairy and Beverage Wall Case is a classic of smart new "FORWARD LOOK" styling . . . sleek square lines . . . with the same sound engineering and refrigeration performance that have sold thousands of Igloo dairy and beverage wall cases.

**GET ACQUAINTED
SHOW TIME
OFFER!
SAVE 5%**

on any Frigid Igloo Case*
ordered during show time.
Offer expires January 1st, 1958.

*Limit 1 case to a customer.

Learn to make more money in '58 with Commercial
Display Refrigerators from Frigid Igloo.

**SEE OUR OUTSTANDING
"FORWARD LOOK" LINE**

at the 10th ARI Exposition

BOOTH 168

Learn how in all Frigid Igloo display cases you
receive positive assurances of maximum economy,
long-lived operation and trouble free performance.

FRIGID IGLOO MFG. CORP.

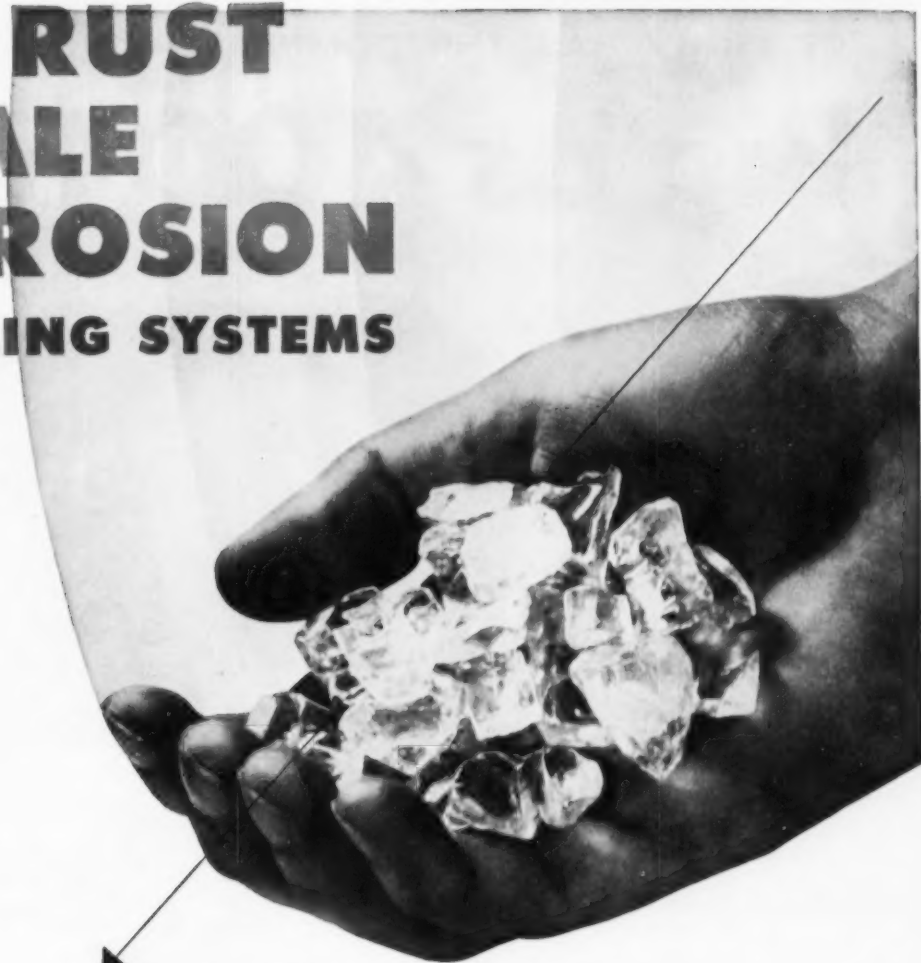
360 Ashburton Ave. • Yonkers 2, N. Y. • YOnkers 5-8891



WRITE TODAY

for the new 1958 FRIGID
IGLOO CATALOG, loaded
with the most complete
specs, illustrations and
handy reference infor-
mation

END RUST SCALE CORROSION IN COOLING SYSTEMS



with **FORMET® CRYSTALS**
the most effective method ever used

Formet Crystals will not only prevent scale formation and corrosion, they will *remove* existing deposits. Treatment is automatic—no proportioning devices needed—simply add Formet Crystals once a month.

Other Perolin Products for Cooling Systems

Perolin® Algae Preventive 905, in the form of convenient briquettes, can easily be placed in the sump or pan—for complete control of organic growths.

Pero-Klean® Dry Acid Cleaner 808 is recommended for the *rapid* cleaning of badly scaled equipment. Simple, safe and harmless formulation.



The **PEROLIN COMPANY, Inc.**
Manufacturing Chemists

350 FIFTH AVENUE, NEW YORK 1, N. Y.
1112 WEST 37th STREET, CHICAGO 9, ILLINOIS

**A HALF-CENTURY OF
EXPERIENCE THE WORLD OVER**

THE PEROLIN COMPANY, INC.

350 Fifth Avenue, New York 1, N. Y. or 1112 West 37th Street, Chicago 9, Illinois

Gentlemen: Please send full information on Perolin's chemicals for Air Conditioning and Refrigeration systems. No obligation.

I have a _____ system, with _____ ton capacity.
(TYPE)

Name _____ Title _____

Company _____

Address _____

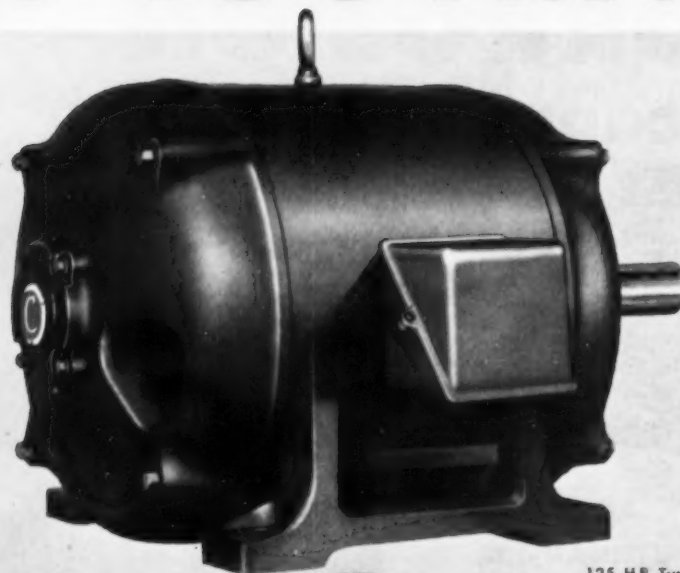
City _____ Zone _____ State _____

Circle No. 10 on Reader Service Card

CENTURY HAS THE COMPLETE LINE...

Big as 400 H.P.

small as 1/20 H. P.



125 H.P. Type SC

WHATEVER YOUR APPLICATION THERE'S A



MOTOR

Performance-Rated[®] to do the job

You'll get the top performance your equipment's designed for... because there's a motor *designed for it* in the Performance-Rated Century line.

Century's technique of Performance-Rating enables you to choose motors with the right size, speed, frame, and torque characteristics to fit—*exactly*—your application requirements.

You can select from a range of 400 to 1/20 h.p.; AC single or poly-phase, or DC; drip proof, dust proof, or explosion proof frames. There are optional corrosion-resistant features; constant speed, multi-speed, varying or geared speeds.

Let us prove the value of Performance-Rating for you... without obligation. Call or write your nearby Century District Sales Office or Authorized Distributor.

Performance-Rated[®]
MOTORS
1/20 to 400 H.P.



CENTURY ELECTRIC COMPANY

1806 Pine Street • St. Louis 3, Missouri • Offices and Stock Points in Principal Cities

Circle No. 11 on Reader Service Card

NOVEMBER, 1957 • COMMERCIAL REFRIGERATION

READING "LEKTROSEAL" COPPER REFRIGERATION TUBE

A Bonus of Dependability with Every Inch!

When you specify READING, you can count on more than just standard copper tubing. It's the product of *specialists* whose entire facilities are concentrated on the fabrication of tubing, and tubing alone, from raw material to finished product. That's why you get that important BONUS of RELIABILITY with EVERY INCH of READING TUBING. Specialized research and engineering, specialized quality control and inspection assure you a trouble-free product second to none. Strategically located depots eliminate the problems of time and space. Personalized "Shirt-Sleeve Service" gives you exactly what you want, exactly when you want it.

For PEACE of MIND and
Customer GOOD WILL—
Be sure to specify
READING!

**READING
TUBE**
And
RED BRASS
PIPE



*Crimped
ends seal
out all
moisture
and dirt*

*Handy,
50 ft. coil in
convenient
protective
carton*

*Soft tempered for
easy forming*
Dehydrated

READING TUBE CORPORATION

Empire State Building, New York 1, N. Y. • Plant: Reading, Pa.

Distribution READING, PA.

Depots: WOODSIDE, L.I., N.Y.
57-17 Northern Blvd.

CHICAGO, ILL.
724 W. 50th St.

DALLAS, TEXAS
9000 Sovereign Row
Brook Hollow
Industrial District

HOUSTON, TEXAS
1121 Rothwell St.

OAKLAND, CALIF.
410 Hegenberger Road
LOS ANGELES, CALIF.
120 No. Santa Fe Ave.

DENVER, COLO.
2845 Walnut St.

CLEVELAND, OHIO
4615 Perkins Ave.

ATLANTA, GA.
690 Murphy Ave.
S.W., Unit 5, Bldg. 8

Circle No. 12 on Reader Service Card



"WHY THE BOSS GAVE ME A RAISE WHEN I SOLD ONLY 96 COMPRESSORS . . .

"I'll call it the XYZ Company. But it's really a well-known manufacturer of air conditioning and refrigeration equipment.

"For a year I'd been calling on XYZ. The engineers, purchasing agent, top men—all of 'em heard our compressor story and reacted favorably. My hopes got pretty high. I even hinted big things in reports to my boss.

"One day the purchasing agent phoned to say he had an order for me. Right off I was up in the clouds. But then I found out the order was for only 96 compressors. Well, I was kind of disappointed because I'd hoped for a really big one.

"I called my boss long distance to give him the story.

Do you know what he said? I couldn't believe my ears.

" 'Bill,' he said, 'we're giving you a raise, effective the first.'

"When the room stopped going around, I could hear the boss telling me lots of our customers started with small orders—maybe a rush job, or just a trial order. But once they find out first-hand that we build dependable, long-lasting compressors and deliver 'em on time at competitive prices—then we're in solid. All the boss wanted was a chance to show them. That's why I got my raise. And it's also why XYZ is one of our best customers today."

Moral: We'd like all your business, but we'll be very happy with 96 units for a starter!

Bendix-Westinghouse

EVANSVILLE, IND.

A Division of Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio • Export Sales: Bendix International, 205 E. 42nd St., New York 17, N.Y.

Circle No. 47 on Reader Service Card

NOVEMBER, 1957 • COMMERCIAL REFRIGERATION

Steer for Space Headquarters at the ARI Show!

SEE HOW

York's futuristic new line will
conquer air conditioning and
refrigeration space problems in
1958!

**Booth 643-646 is the place...
Nov. 18-20th the time...BE THERE!**

Find out how York in '58 takes command of the air conditioning market with new, revolutionary room conditioners that take up less *space* in the window...new residential and commercial air conditioners that meet the special *space* problems of every size and type of building...new ice makers that take up far less *space* on your customers' floor. And, don't miss seeing the first really new innovation in condensing units since the introduction of the hermetic condenser!



LEARN HOW YORK IN '58 WILL:

Dominate Magazine Space

with a full schedule of hard-hitting national ads!

Overpower Newspaper Space

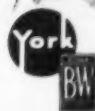
with complete, power-packed "packages" of co-op and factory ads!

Take Over Display Space

with compelling new display pieces, brilliant new merchandising ideas!

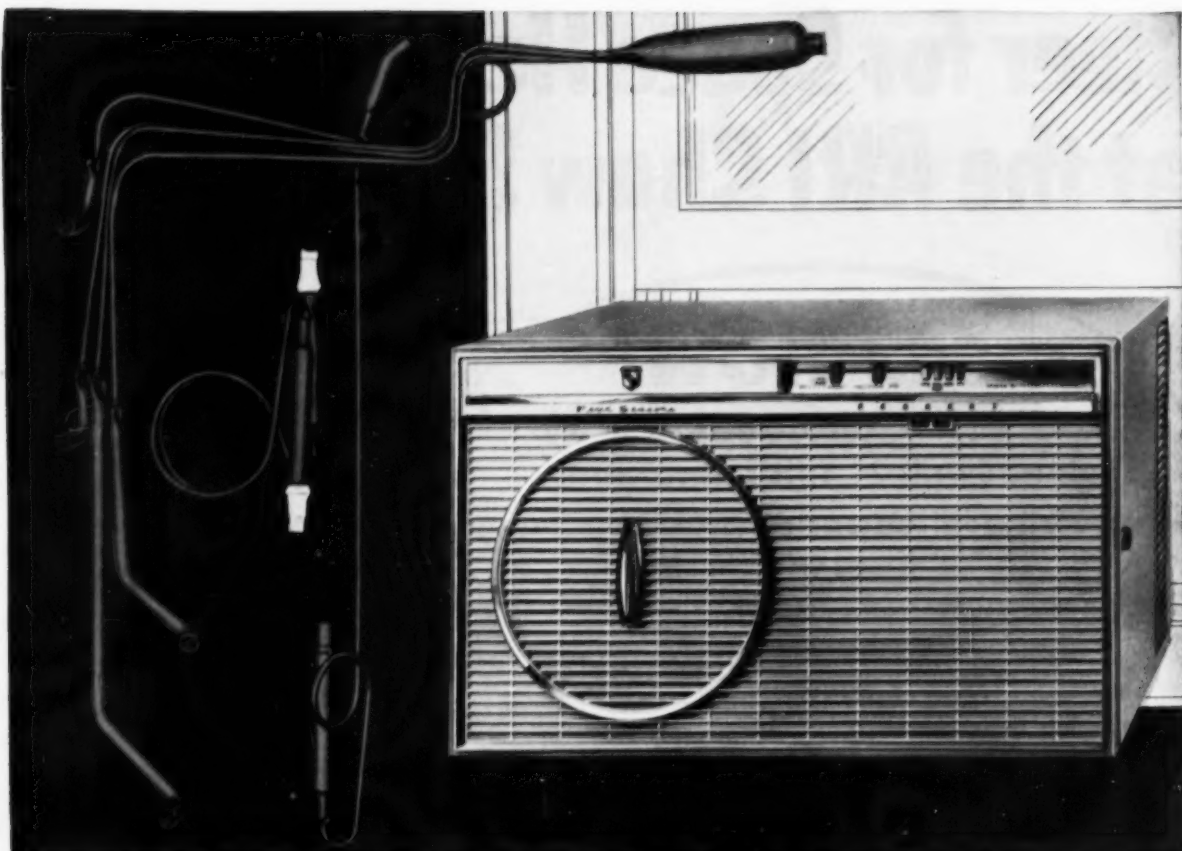
**Come on in and let us prove—
your FUTURE and FORTUNE
now lies with York!**

YORK



YORK CORPORATION, YORK, PA., Subsidiary of Borg-Warner Corporation

Circle No. 48 on Reader Service Card



Fedders capillary assemblies incorporating Anaconda restrictor tubes: Left, assembly serving the Fedders 3-hp packaged air conditioner; center, the 1-hp heat pump unit; right, the 3/4-hp casement air conditioner, illustrated.

"We've never had to reject an inch of Anaconda Restrictor Tube"—Fedders-Quigan Corp.

As one of the largest producers of room air conditioners, Fedders-Quigan Corporation, Maspeth, Long Island, uses miles of restrictor tube a year. Since 1954, Fedders has been using Anaconda Restrictor Tube. And in that time, the company has not had to reject a single inch of it.

Fedders looks on the restrictor tube as the jugular vein of the air conditioner. The faithful performance of the entire unit depends largely on the tube's uniformity and quality. Fedders looks for these qualities in restrictor tubes:

1. Uniform performance within extremely close air-flow limits, made possible by consistently uniform inside diameter and a smooth, round, clean bore.
2. Easy bending, without fractures.

Fedders uses restrictor tube in four inside diameters in six lengths, reordering from Master Sample Reference Tubes. Duplicate Master Reference Samples kept at French Small Tube Division, The American Brass Company, insure that

all shipments have the air-flow limits originally established.

Consistently high quality. All Anaconda Restrictor Tubes are plug-drawn to finish. Every length is chamfered at both ends, inside and out. Each tube is thoroughly washed and dried, given a final air-flow test, carefully bundled, with ends of each bundle wrapped in paper. Anaconda Custom-Made Restrictor Tubes are made in both copper and aluminum, in nominal inside diameters from .025 to .090 inches.

Write for information or free Air-Flow Slide Rule Calculator. Address: French Small Tube Division, The American Brass Company, Box 1031, Waterbury 20, Conn. 8722

ANACONDA® RESTRICTOR TUBES

Made by French Small Tube Division of The American Brass Company

ANACONDA PRODUCTS FOR THE REFRIGERATION AND AIR-CONDITIONING INDUSTRY



Circle No. 14 on Reader Service Card



"CALGON TREATMENT is by far the most effective"

J. L. Warren, Refrigeration Maintenance Engineer

Mr. Warren has been working with refrigeration equipment since 1918. He says that during that time he has found nothing to equal the Calgon Big 3 in effectiveness, economy and trouble-free use. Calgon® Scale Remover has been used to clean the water-cooled condensers so thoroughly that they have been restored to their original capacity, and Micromet® Plates are used to keep the system clean. Mr. Warren is the refrigeration maintenance engineer at Colonial Stores warehouse in Raleigh, N.C.

Calgon's Big 3 have established an enviable reputation among refrigeration and air conditioning maintenance people. Each of the three products does its job efficiently, safely and economically.

1. Calgon Scale Remover makes it easy to clean up a system. Corrosion inhibitors protect system while in use. Special built-in pH color indicator shows how much Scale Remover to use, and helps tell when system is clean.
2. Micromet Plates provide continuous treatment to inhibit further scale formation and to control corrosion. A single charge will last about six months and the inexpensive feeding bag is easily installed.
3. Calgon Algaecide controls algae and slime growths. Periodic addition keeps equipment operating efficiently.



SEE YOUR
REFRIGERATION WHOLESALER
FOR CALGON'S BIG 3!



CALGON COMPANY



A DIVISION OF HAGAN CHEMICALS & CONTROLS, INC.
HAGAN BUILDING, PITTSBURGH 30, PENNSYLVANIA
DIVISIONS: CALGON COMPANY - HALL LABORATORIES

SENSATIONAL NEW RANCO SOLVE TOUGH HEAT

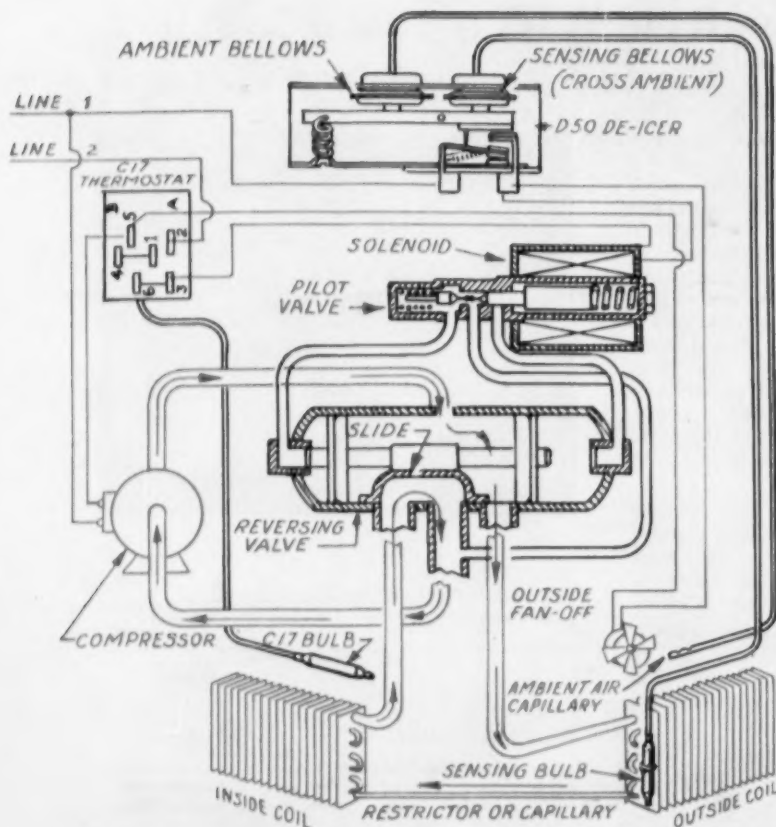
Nothing has held up heat pump success more than the lack of suitable automatic controls. Now, with a control system from Ranco centered around a sensational new de-icing control, you can offer absolutely automatic heat pump operation in a much larger geographical area than ever before and for both window and central systems.

The Automatic De-Icer. Newly-developed Ranco D50 and D52 De-Icer Controls are the *only* controls which detect coil ice quickly and automatically. Efficiently simple, D50 and D52 are actuated solely by the presence of ice on the outside coil. Operation is based upon increases of differential between ambient outside air and the outside iced coil as compared to a clear coil. "Spread temperature" for initiation of the de-icing cycle is adjustable on both controls, making them adaptable for all types of air conditioning and climate conditions.

The Reversing Valve. New Ranco V25 and V26 Slide-Type Reversing Valves have many desirable features fitting them specifically to heat pump operation. No metal-to-metal contact minimizes wear due to dirt and corrosion, reduces friction. Nylon transfer slide is a thermal insulator reducing heat exchange. Mid-stroke stops are eliminated, and a bypass prevents overloading of compressor. Adaptability is insured by range of capacities through 7½ tons, solenoids at 24, 115, 208 and 230 volts and 50 or 60 frequency cycles.

The Cycling Control. Ranco C17 Thermostat Control provides completely automatic, combination heating-and-cooling cycling control. Responds to room temperature, starts and stops compressor on temperature demands and actuates the reversing valve. Varied wiring schemes permit C17 to control strip and step heaters used in conjunction with the heat pump.

ABSOLUTELY AUTOMATIC OPERATION



DE-ICING PHASE (Heating and Cooling Phases Not Shown)

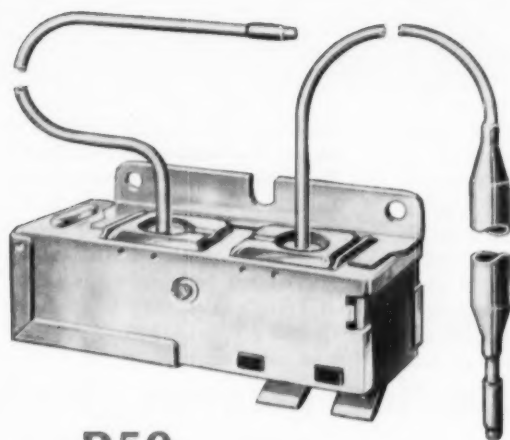
HEATING PHASE—Pilot valve solenoid is energized causing pressure differential to move slide in reversing valve to right, removing heat from the outside coil and causing a build-up of ice. As the ice accumulates, heat exchange between coil and ambient air is reduced, lowering refrigerant temperature.

DE-ICING PHASE (Diagram at left)
—This increase in spread temperature over the clear coil temperature is sensed by the cross ambient bulb to set the de-icer in action. Temperature drop moves rocker arm which opens switch to stop outside fan and de-energizes pilot valve solenoid. Right port of pilot valve closes, pressure moves reversing valve slide to the left transferring heat in unit to the outside coil. In 3-5 minutes, all ice is removed and coil temperature increases rapidly expanding bellows and closing switch that terminates de-icing cycle, starts fan motor and re-energizes solenoid to return unit to heating phase.

COOLING PHASE—Limited vapor charge in the ambient air element immobilizes De-Icer Control contacts in closed position at ambients above 48°F, permitting fan operation through the De-Icer Control. Cooling is thus achieved by the same refrigerant flow as in de-icing, and the compressor is operated by temperature demands of the C17 Thermostat.

CONTROLS AND VALVES PUMP PROBLEMS!

Completely Automatic De-Icing Control New Slide-Type Reversing Valve Automatic Cycling Control



D50
DE-ICER CONTROL

SIMPLICITY—operates solely due to presence of ice on external coil. **PROTECTIVE MOUNTING**—two capillaries permit mounting of control in weather-protected chamber. **COMPLETE CONTROL**—ambient power element action not effective above 48°F. Sensing bulb, along with the ambient power element, gives complete control at coil. Switch action of D50 is S.P.S.T., with S.P.D.T. action available in the D52.



V25
REVERSING
VALVE

NO METAL-TO-METAL CONTACT—less wear from dirt and corrosion. **PRESSURE DIFFERENTIAL OPERATION**—eliminates mid-stroke stops. **NYLON TRANSFER SLIDE**—less friction, minimum heat exchange. **SPECIAL BYPASS**—prevents compressor overload during transfer period. **HERMETIC CONSTRUCTION**—single solenoid pilot valve integral with main valve. **ADAPTABILITY**—capacities through 7½ tons. Solenoids available in 24, 115, 208, 230 volts with 50 or 60 frequency cycles.

Free Booklet!

Write for free detailed Booklet #1687 or contact Ranco to see how these amazing new controls and valves can help solve your heat pump problems.



Ranco[®]
INCORPORATED

COLUMBUS 1, OHIO
Circle No. 16 on Reader Service Card

ABOUT PEOPLE

Simpson Electric Co. announces the addition of **Frank Hadrick** to its engineering staff as chief field engineer (test equipment). Hadrick, formerly was chief television engineer for Admiral Corp. Beside electronic service experience, he has held positions as service manager, directing service operations at both wholesale and retail levels.



F. F. Moore, Jr. has been appointed eastern district sales manager for Wolverine Tube. Moore has served in sales capacities with Wolverine in New York and greater New York for the past ten years.

Promotion of **John Seippel** from Chicago regional air conditioning specialist to sales and product training manager for RCA Whirlpool Corp. air conditioners has been announced. Seippel, with the firm for two years, will make his headquarters in St. Joseph, Michigan.

William M. Semple has been appointed to the newly created position of works manager for Recold Corp. Semple formerly was manufacturing director for Beckman Helipot Corp., Newport Beach, Calif. Prior to that he was with Astatic Corp., in Conneaut, Ohio.



Armstrong Cork Co. has realigned responsibilities for industrial insulation sales following the retirement of Sloane C. Martin as manager of low temperature insulation sales and assistant manager of contact operations. **J. W. Liddell**, who will continue as manager of contract operations, will also be responsible for outright sales of jobbed and private label brand products, including sundries.



J. P. Sawyer F. S. Donnelly, Jr.

J. P. Sawyer has been named manager of low temperature insulation and insulating refractories sales. He formerly was assistant manager of industrial insulation sales and assistant manager of insulating refractories. **F. S. Donnelly, Jr.**, who was manager of industrial insulation sales, becomes manager of Armaflex and sundries sales and manager of market research and new product development.

Appointment of **William A. Bours III**, as director of sales of Du Pont's Freon Products Div., succeeding Robert J. Thompson, who retires at the end of the year, has been announced. **Thomas D. Johnson Jr.**, for the last four years manager of the division's aerosol propellents section, will succeed Bours as assistant director of sales. Bours joined Du Pont's engineering department in 1941 as a member of the Industrial Engineering Div. staff at Chambers Works, Deepwater Point, N. J. In 1950 he was transferred to the organic chemicals department as sales development manager of the

Fine Chemicals Div. and in 1951 was named manager of the plants technical section. Johnson joined Du Pont's organic chemicals department as a chemist, in 1940.

Halstead & Mitchell has announced the appointment of **W. B. Knox** as sales representative.



W. B. Knox Associates, with headquarters in Atlanta, will represent the Pittsburgh firm in Georgia, Alabama, South Carolina, and Tennessee. Prior to joining Halstead & Mitchell, has spent 10 years with Alco Valve Co., from which he resigned to form his own company. From 1939 to 1945 he was with the Georgia Power Co.

Three new sales assignments have been announced by Trane Co. **Henry R. Deming** and **Anthony R. Marold**, both sales engineers, have been appointed to the firm's offices in Denver and Appleton, Wis., respectively. **Robert H. Owens** has been named manager of Trane's sales office in St. Paul. Owens had been with the Cleveland sales office.

Thatcher Furnace Co., has announced the appointment of



T. Gallagher

Thomas M. Gallagher as sales engineer for its eastern Pennsylvania territory, which includes the Philadelphia and Wilmington, Del. Districts. Gallagher will work with Henry Linksey, Thatcher representative in the Philadelphia area. **John C. Hensel** has been named sales engineer for its northeastern New York state territory. Hensel succeeds

THESE IMPERIAL TIME-SAVERS TRIM COSTS

OF CUTTING, FLARING AND BENDING TUBING...

TRY 'EM ON YOUR NEXT JOB!



(A) Bends hard or soft tubing. Open-side design. Accurate bends, any angle to 180°. Calibrated. No. 364-FH "Blue Dot" tube bender. Sizes: $\frac{1}{8}$ to $\frac{3}{8}$ " O.D. tubing. Individual benders for each tubing size.

(B) Spare cutting wheel included at no extra cost with this tube cutter. Exclusive! Fits behind retractable reamer — ready for

emergencies. Free-wheeling, ball-bearing action. No. 274-F Hi-Duty tube cutter. For $\frac{1}{8}$ to 1" O.D. tubing.

(C) Adjust-o-matic tube cutter for sizes $\frac{3}{4}$ to 2 $\frac{1}{4}$ " O.D. Quick slide-to-size ratchet adjustment. Quick ratchet release. Ask for No. 206-F.

(D) Automatic burnishing action! Rolls flares in the air. Hard chrome finished cone. No. 300-F flaring tool flares and burnishes $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ " O.D. tubing.

(E) Flares 9 sizes of tubing. Precision gauge assures proper size of flare. Hard chrome finished cone. No. 900-F (45°) for $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$ " O.D. tubing.

Imperial offers you the world's most complete line of tube-working tools with more work-saving features!

Equip now with Imperial tools to take the "work" out of tube working. Whatever the type of tubing — copper, aluminum, steel or stainless steel — you get more accuracy, speed and work-

ing ease. And customer-pleasing craftsmanship comes easy. Tool up now with Imperial and be first with the latest. Get complete facts on the industry's most complete tubing tool line.

Avoid lost time and grief by replacing labor-wasting tools NOW with years-ahead IMPERIAL tubing tools. See your Imperial wholesaler now, or write for Catalog 3011.



No. 300-F flaring tool for 45° flares. Single lever clamping. Flares $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ " O.D. tubing.



No. 140-F test plug — for closing end of tube temporarily. Pressures to 100 pounds.



No. 203-F5 flaring tool for larger sizes: $\frac{3}{8}$, $\frac{7}{8}$, $1\frac{1}{2}$ " O.D. tubing.



No. 384-F sawing vise for cutting tubing $\frac{3}{16}$ to $1\frac{1}{2}$ " O.D.



No. 270-F Gear-type bender bends any type of tubing.



No. 260-F tube bender combination for 7 sizes: $\frac{1}{8}$ to $\frac{3}{4}$ " O.D.

IMPERIAL

THE IMPERIAL BRASS MFG. CO.
6300 W. Howard St., Chicago 31, Illinois, Dept. CR117
In Canada: 334 Lauder Ave., Toronto, Ontario

Emblem of Quality



Tom Griffin, who is opening a business in Hudson, N. Y., where he will be a Thatcher franchised dealer.

J. J. Drapeau, a mechanical engineer, has joined the Air Conditioning, Heating, and Refrigeration section of the Building Technology Div. of the National Bureau of Standards. Drapeau will study heat and moisture transfer in refrigerated structures, and partici-

pate in the development of a standard rating method for such structures. Prior to coming to the bureau, he worked as a senior test engineer for the Wright Aeronautical Div. of Curtiss-Wright Corp., and as a mechanical engineer for A. J. Harriman, Inc.

Appointment of **Robert P. Maxson** as purchasing agent has been announced by Tork Time Controls, Inc. Maxson's former

positions include: Avco Mfg. Co., advance development division, purchasing department; Emerson Radio, purchasing department; General Electric, production and purchasing departments; and U. S. Rubber Co.; (wiring and cable division), St. Louis district sales manager; Connecticut sales representative.

The refrigeration department of Virginia Smelting Co. announces the appointment of two field representatives, **Roman H. Bettag** and **Arthur H. Rollins**. Bettag with headquarters in St. Louis will travel Missouri, Arkansas, Nebraska, Kansas, and portions of



R. H. Bettag

A. H. Rollins

Illinois and Iowa. Rollins will headquarter in Dallas, Tex. and will cover north Texas, Oklahoma, and portions of Louisiana and Mississippi. Bettag comes to Virginia from Kerotest Mfg. Co.; Rollins was formerly with the Carrier Corp.

Appointment of **Albert F. Johnson** as product manager of



its 2, 3, and 5 ton air-cooled, self-contained air conditioners, has been announced by Gibson Refrigerator Co. The new product manager replaces J. L. Johnson, former vice president and general sales manager, who has retired. A. F. Johnson joined Gibson in February, 1955, serving in the company's central air conditioning sales department and as an accountant manager in the

shuts off both sides of line
... prevents loss of liquid,
gas, or pressure.

Wherever
2-way shut-off
is required...

HANSEN

**QUICK-CONNECTIVE
TWO-WAY SHUT-OFF COUPLINGS**

FOR
PRESSURE
OR VACUUM
SERVICE

To connect a Hansen Two-Way Shut-Off Coupling, you merely pull back the sleeve and push the Plug into the Socket. To disconnect, just pull back the sleeve. No tools required. When Coupling is disconnected, similar valves in Socket and Plug shut off both ends of line—practically eliminate spilling of liquid or escape of gas at instant of disconnection.

Hansen Series HK Two-Way Shut-Off Couplings for pressure or vacuum service are available with female pipe thread connections from $\frac{1}{8}$ " to 1" inclusive. All sizes are available in either brass or steel.

**WRITE FOR THE
HANSEN CATALOG**

Here's an always ready reference when you want information on couplings in a hurry. Lists complete range of sizes of Hansen One-Way Shut-Off, Two-Way Shut-Off, and Straight-Through Couplings—including Special Service Couplings for Steam, Oxygen, Acetylene, etc.



REPRESENTATIVES IN PRINCIPAL CITIES

SINCE 1915

THE HANSEN  **QUICK-CONNECTIVE FLUID LINE COUPLINGS**

MANUFACTURING COMPANY

4031 WEST 150th STREET • CLEVELAND 11, OHIO

Circle No. 18 on Reader Service Card

Capitolaire

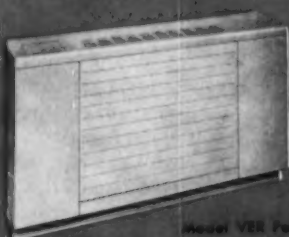
The
complete line
of

- Residential
- Commercial
- Industrial

Air
Conditioning
Products



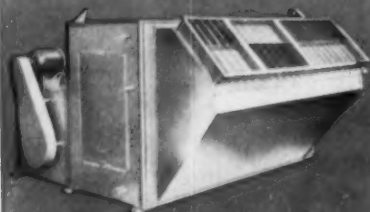
Model COM Commercial Air Conditioner 3 & 5 ton—Water & Air Cooled



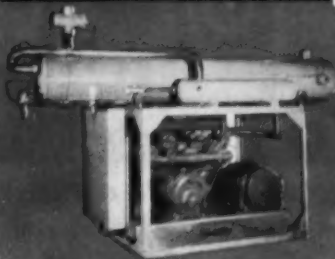
Model VER Fan-Coil Units 200, 300, 400, & 600 CFM



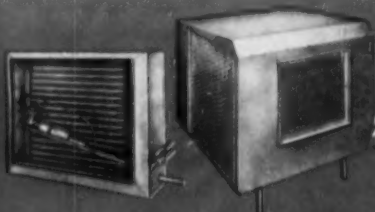
Model RES Residential Air Conditioner Air Cooled—3 & 5 ton



Flexazone Horizontal Model Air Conditioner for multi-room applications. CFM capacities from 1800 to 24,000. Vertical model available.



Model CWG Water Chiller 7 1/2 thru 75 tons



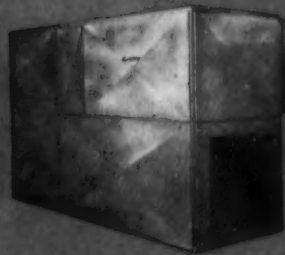
Model CP Flat Ceiling with Remote Air-Cooled Condensing Unit



Model VRS Fan-Coil Unit Summer Cooling—Winter Heating



Model RES Residential Air Conditioner 3 & 5 ton Water Cooled



Model ABCE Air Conditioner with Built-in Evaporative Condenser 7 1/2 thru 60 tons. Also available as water cooled.

See our display in Booths 269-271, Air Conditioning Refrigeration Exposition Chicago, Nov. 18-21



Send to Marketing & Promotional Department for free bulletin on air conditioning equipment which interests you.

National-U.S. Radiator
CORPORATION

A-2

HEATING AND AIR CONDITIONING DIVISION
Johnstown, Pennsylvania

Circle No. 19 on Reader Service Card

company's private brands department. Previously he spent 13 years with Carrier Corp. as sales engineer in Syracuse, Cleveland, and Chicago. He also was a sales engineer for Gulf Oil Co. in New York, and an experimental engineer with De Vilbiss Co., in Toledo.

Taco Heaters, Inc., announces the appointment of **John J. Mitchell**, to cover Scranton, Wilkes-Barre, Harrisburg, Lancaster York, and westward to and in-

cluding Williamsport, in Pennsylvania. Mitchell has extensive experience in the heating field, and was most recently employed by R. E. Weeks Co., wholesaler in Scranton, Penn. His headquarters will be in Middletown, Penn.

Appointment of **Edward E. Howard** as branch manager of a new sales office at 4807 Lomas Blvd., N. E., in Albuquerque, N. M. has been announced by American Blower Div. of American-

Standard. Howard joined American Blower in 1953. For the past four years, he has been working as a sales engineer in the Denver territory.

Henry Valve Co., has announced the appointment of **Robert W.**



sales staff. As **Carvell** to its sales supervisor of its new Industrial Div., Carvell will head the newly expanded program on high pressure forged steel

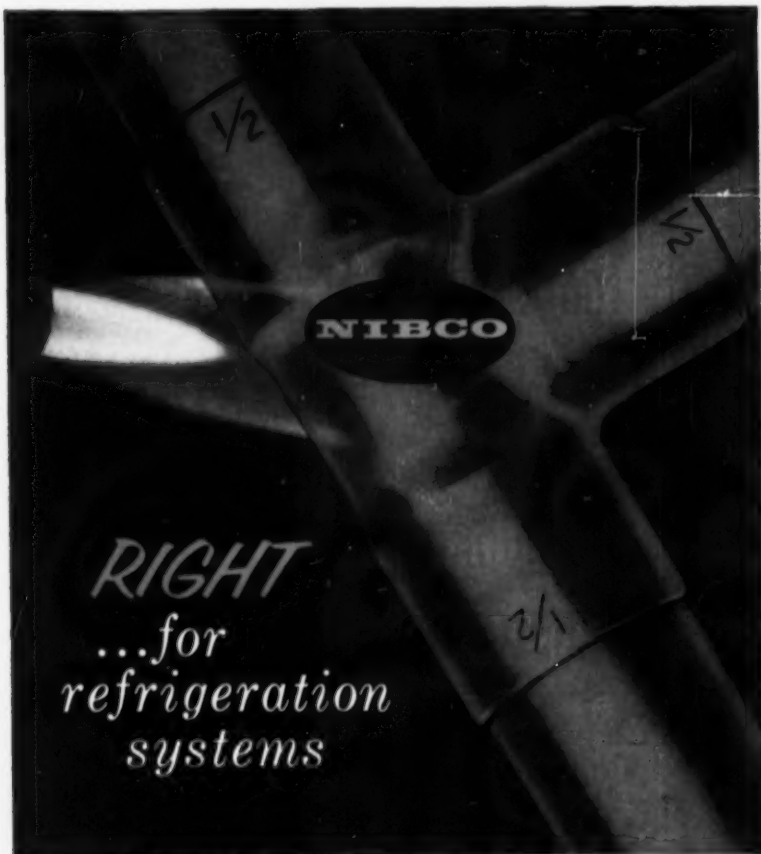
fittings and valves for industrial application. He previously was sales manager of Bohn-Betz Div., in Danville, Ill. concentrating on wholesaler activities. Prior to this he was with Kennard Corp. of St. Louis, as assistant sales manager. As a field engineer, he sold automatic flow control devices for eight years with Alco Valve Co. in the Ohio, Michigan, Indiana, Pennsylvania, Kentucky, and West Virginia area.

John W. Kidd Jr. has been appointed sales engineer for Wall Tube & Metal Products Co., Newport, Tenn. Kidd was formerly sales engineer with United States Gypsum. He will be responsible for the sales of all company products through the southeast.

Kold-Hold Pacific (Tranter Mfg., Inc.) of Los Angeles has announced the appointment of **John B. Callahan** to the position of sales manager.



Callahan will supervise the sale of refrigeration equipment in California, Arizona and Nevada from the Los Angeles and Oakland offices. Callahan has had



NIBCO "ONE SPOT" PURE COPPER WROT FITTINGS*

Precision-sized for quick fit to tube, NIBCO wrot fittings in popular sizes are also designed for soldering with "one spot" heating as shown above. The smooth interiors of these wrot fittings assure rapid flow... their compact metal grain structure is as strong, and equally resistant

to gas leakage as the tube itself. What's more, rigid factory inspection and careful packaging mean NIBCO wrot fittings pass all tests when the installation is completed. To be right, buy right... specify "NIBCO" on your next order for wrot copper fittings. There is no "or equal!"



Write for free catalog
NIBCO Inc., 1114 Plum Street
Elkhart, Indiana

Circle No. 20 on Reader Service Card

experience in sales and sales management for a Los Angeles refrigeration and restaurant equipment company.

Appointment of **Richard B. Connell** as manager-air conditioning sales has been announced by Flexible Tubing Corp.



Connell comes to Flexible from Norma - Hoffman Bearings Corp. where he was field representative for Chicago and northern Illinois for the past three years. Previously, he was assistant to the sales manager of Thermoid Co., Industrial Friction Div. of Trenton, N. J., and later field representative for Thermoid in the northern Illinois territory.

Dunham-Bush, Inc., has announced the appointment of **Ray Ferron** to the company's staff of sales engineers.



Ferron will cover the southern Florida and Caribbean Island territory. He previously was associated with Hill-York-Broward Co., Fort Lauderdale, Fla.

Century Engineering Corp., Cedar Rapids, Iowa, announces the appointment of **Leo Graham**, Jackson Heights, New York, as district sales manager of District No. 2, which comprises parts of New York, New Jersey, and Pennsylvania. Al-



L. Graham

so announced is the appointment of **Paul Saffell** as district representative of District No. 18, which comprises Texas, Oklahoma, Arkansas and part of Kansas.

Lima Register Co. announces the appointment of **Joseph C. Hanger** as district manager of five mid-western states. Hanger will supervise sales activities in Ohio, Indiana, Michigan, Kentucky, and West Virginia.

Barney Maser has been appointed regional sales manager for Bally Case and Cooler Co. From headquarters in Chicago, he will cover all Wisconsin and part of Illinois, Indiana and Michigan.

Superior Valve & Fittings Co. has appointed new sales representatives in two territories. Harco, Inc., with offices in Houston and Dallas, will represent the company in the southwest, covering

3 important products for refrigeration



The MOVING Dehydrant

1. Actually destroys moisture . . . not a mere anti-freeze.
2. Scavenges oxygen . . . helps to overcome the harmful effect of traces of oxygen which may remain in a refrigeration system after the usual purging.
3. Cannot cause pressure drop.
4. Does not release moisture when temperature changes.
5. May be used in units containing any of the "Freons", methyl chloride, methylene chloride or isobutane.
6. Costs only about 8 cents per lb. of refrigerant treated. Used in minute amounts.

THAWZONE

The Only Product That DESTROYS Moisture — and Removes All of It

Try a 1 oz. bottle of Thawzone today! Also available in 4 oz. and pint bottles

Leak Lock

FOR THREADS AND GASKET SURFACES

Leak Lock forms a tough film that sticks hard and is flexible, but won't break. The usual hard and crumbly texture, that characterizes ordinary sealing compounds, has been eliminated. The plastic resin base of Leak

The ONLY Joint Sealer Designed Especially To Hold Refrigerants!

Lock stays "alive" and elastic, is able to withstand vibration and is unaffected chemically by refrigerants.

Leak Lock "hangs on" to all surfaces . . . steel, iron, copper, aluminum, cork, asbestos, plastics, etc.

Send for FREE SAMPLE on your business letterhead

TRACE LEAK DETECTOR

"Spots" the Leak

Refrigerant or oil leaks in tubing, fittings, castings, etc., are easily and quickly found by the use of Trace, even when covered with ice or frost. This useful liquid leaves a bright red spot where the leak is OR WAS. It can be used with all refrigerants and it does not affect the refrigerant or the lubricating properties of the oil.

Ask your wholesaler.

HIGH SIDE
CHEMICALS
INCORPORATED
4 COLFAX AVE.
CLIFTON, N. J.



Jenni Genetron says: Team up with the
super-dry refrigerants! See your
wholesaler — ask for

genetron[®]

Super-Dry REFRIGERANTS

genetron 11 ORANGE LABEL CCl_3F TRICHLOROMONOFUOROMETHANE

genetron 12 WHITE LABEL CCl_2F_2 DICHLORODIFLUOROMETHANE

genetron 22 GREEN LABEL CHClF_2 MONOCHLORODIFLUOROMETHANE

genetron 113 PURPLE LABEL $\text{C}_2\text{Cl}_3\text{F}_3$ TRICHLOROTRIFLUOROETHANE

genetron 114A BLUE LABEL $\text{C}_2\text{Cl}_2\text{F}_4$ DICHLOROTETRAFLUOROETHANE

Available from wholesalers everywhere



GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 Rector Street, New York 6, N. Y.

FOOTBALL FANS:

Enjoy the pigskin season more. Ask your wholesaler for the Genetron Football Handbook. Contains complete schedules for all leading college teams and conferences; lots of other important information about the game.



Visit Us at Booth 437

10th Air-Conditioning &
Refrigeration Exposition
Chicago, Nov. 18-21

**keep
that
equipment
running...**



with



MOTOR-RUN

Capacitors

Save valuable down-time and make more money...handle those motor capacitor replacement jobs faster, safer, better and more profitably by using Aerovox AC Capacitors. You'll find that the right replacement capacitor means a stay-put installation and a sound profit for you. Aerovox, pioneer manufacturer and supplier of the major portion of AC capacitors in original equipment, makes the proper replacement unit for all those air-conditioning, refrigeration and motor-run applications.

Get the capacitor you need when you need it....your local Aerovox Distributor stocks the complete line of Aerovox AC capacitors for motor-start and motor-run applications. Right now he has a brand-new Aerovox AC Capacitor catalog reserved for you. It's up-to-date in every respect with complete stock listings, mounting hardware, test instruments and technical information. Your copy is **FREE** for the asking **ONLY** from your local distributor. For the name and address of your nearest Aerovox Distributor write...



AEROVOX CORPORATION
NEW BEDFORD, MASS.

DISTRIBUTOR DIVISION

In Canada: AEROVOX CANADA LTD., Hamilton, Ont.

Circle No. 23 on Reader Service Card

Texas, Oklahoma, New Mexico, Louisiana, Arkansas and Mississippi. Principals of the Harco firm are **George Harris**, **Ed Harris** and **Harry Brown, Jr.** Minnesota, Iowa, North Dakota and South Dakota will be covered by **C. L. Bensen**. His headquarters will be in St. Paul.

Mueller Climatrol, Div. of Worthington Corp., has announced two personnel changes. **William S. Malloy** has been appointed to the position of personnel manager. **Richard B. Schmidt** has been named to the newly created position of sales promotion manager. Malloy joined the firm in 1952 as



W. S. Malloy

R. B. Schmidt

industrial relations counsel and later became director of personnel relations, plant personnel manager, and insurance manager. Schmidt joined Mueller's sales organization in 1947 as a sales correspondent, later became a territorial sales representative. Since January 1956, he has been Milwaukee manager.

In two Trane Co. branch office managerial promotions, **Joseph Rohats** will head the Phoenix, Ariz., branch, and **Robert Knowles** will direct the office in Greenville, S. C. Rohats formerly was in Trane's San Antonio office. Knowles has been in the Richmond sales office.

W. G. Morton Co. has announced the appointment of **Bert F. Dart** to head its Heating and Air Conditioning Div. as sales manager. The company is distributor of Mathes Co., Inc., heating and air conditioning equipment in upper

New York State and New England. Dart was manager of the Heating and Air Conditioning Div. for Roskin Bros., Inc., Albany, N. Y., prior to taking his present position.

Walter A. Wendler has been named to the newly created position of vice president in charge of sales; and Robert I. Pearce, sales manager of Amana Refrigeration, Inc. Wendler first joined the Refrigeration Div. of Amana Society in 1942 and has served in various sales capacities. In 1952, he was named assistant gen-



W. A. Wendler

R. I. Pearce

eral manager and in 1954, was made a vice president. He became a member of its board of directors in 1956. Pearce was manager of sales training at Crosley Div. of AVCO for five years; later vice president of Regan Film Productions. He joined Amana in 1955 as director of sales Training and in May of 1957, became director of freezer sales.

Appointment of Bruce F. Balcom as assistant service manager, Tranter Mfg. Co., Inc., Kold-Hold Div. Before joining Tranter, Balcom was associated with Danek Refrigeration Sales & Service and Universal Electric Co., both of Owosso, Mich.

Drayer-Hanson announces the appointment of Evelyn McNamara as administrative assistant, sales department. She will have administrative liaison with the national network of D-H local-area sales representatives, the company's assistant sales manager, and staff of sales application engineers.



NOW YOU CAN CHECK RELATIVE HUMIDITY ANYWHERE— NO SLINGING OR WHIRLING

This brand-new Bendix-Friez Psychron gives you extremely accurate relative humidity and dew point information with just the flick of a switch. It is a battery-powered portable psychrometer designed and manufactured to meet rigid U. S. Weather Bureau specifications.

Unlike ordinary sling psychrometers, the Bendix* Psychron requires no whirling or special tech-

nique to operate. Three standard-size flashlight batteries power a tiny fan that draws air over wet and dry bulb thermometers at a rate exceeding 15 F.P.S. As a result, the Psychron can be safely used in close quarters. It has a special thermal shield to avoid radiation effects for use in bright sunshine and built-in illumination for use in dark or poorly lighted areas.

Order direct from us or through our nearest dealer. For further information write: Bendix-Friez, 1494 Taylor Ave., Baltimore 4, Maryland.

*REG. U.S. PAT. PEND.



Price includes metal carrying case, nylon neck strap, psychrometric slide rule, 1-oz. plastic water bottle and instruction book containing humidity and dew point tables.

Friez Instrument

DIVISION



Circle No. 24 on Reader Service Card

REMOVE THE SCALE... SAVE THE EQUIPMENT!

"VIRGINIA's" new solid scale remover
is pronounced safest for use on dip zinc coated,
galvanized and aluminum water-cooled equipment



**LOOK FOR THIS
SEAL OF SAFETY**

Every drum of new "Virginia" solid scale remover bears the seal of safety which relieves you of worry about equipment injury. Use "Virginia" to restore peak heat-transfer efficiency of your water-cooled equipment—quickly, economically. Avoid costly shutdowns—eliminate the personal hazards of handling corrosive liquids. *Insist on the new, improved "Virginia" formula with the seal of safety atop the drums.* Packed in 10 and 50-lb. drums.



STOP SCALE FORMATION with "Virginia" Water Treatment and Corrosion Inhibitor. Holds scale-forming solids in suspension or solution, greatly reducing scale buildup on metal surfaces; protects against corrosion. Packed in 6 and 50-lb. containers.

Order these field-tested products from your
wholesaler or write **REFRIGERATION DIVISION,**
Virginia Smelting Co., 278 Jefferson St., West
Norfolk, Va.



ESOTOOL•KINETIC CHEMICAL'S "FREON" REFRIGERANTS•V. METH-L
CAN-G-GAS • PERMAGUM • PRESSTITE TAPE • KwikWRAP
SUNISO REFRIGERATION OILS • WATER TREATMENT CHEMICALS
Available in Canada and many other countries

Tecumseh

engineering **VISION**

DEVELOPS THE BIG LINE

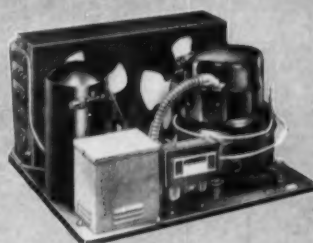
OF COMPRESSORS FOR COMMERCIAL APPLICATIONS . . .

47 models in the 1/2 - 3 HP range

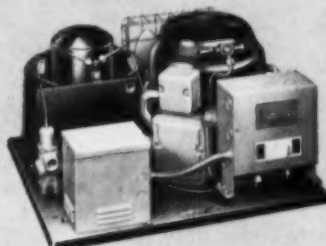
By extending the commercial application range of the economical Tecumseh hermetic compressors we are now able to offer our customers in this field the same basic advantages enjoyed by other Tecumseh customers. This includes low initial cost through efficient mass production, less weight and therefore lower shipping expense, low maintenance costs by quality construction, and fast field replacement through a well organized wholesaler program. With 57 Air-cooled models available from 1/9 — 3HP, 30 of them in the most popular commercial range of 1/2 — 3 HP, Tecumseh offers the most comprehensive line in the industry.

The Tecumseh water cooled line of commercial hermetic units has been effectively increased to include 12 models from 1/2 to 3 H.P. High or medium back pressure applications are available in all models. Plans are under way to include a complete range of low back pressure models. The Air-Water cooled line now includes 5 models in the 3/4 to 3 HP range. Where peak loads are present, and additional condenser capacity is required for short periods, these units offer the most economical answer.

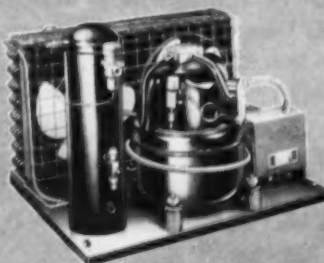
Your Tecumseh wholesaler will stock and sell this equipment. See him today!



**30 Air Cooled
Models**
from 1/2 - 3 HP



**12 Water Cooled
Models**
from 1/2 - 3 HP



**5 Air-Water Cooled
Models**
from 3/4 - 3 HP



The Leader Serving Leaders in the Air Conditioning and Refrigeration Industries

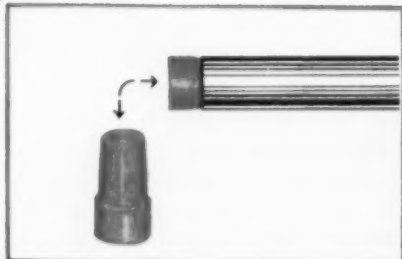
TECUMSEH PRODUCTS COMPANY

MARION, OHIO

TECUMSEH, MICHIGAN

EXPORT DEPT: P. O. Box 2280, 24530 Michigan Ave., W. Dearborn, Michigan

ONLY
ROLL-O-TUBE[®]
PROVIDES
FULL TIME
PROTECTION



Ever have to throw away a length of refrigeration tube because it had gotten dented or battered in the course of the day's work? It's both costly and frustrating—makes you feel like you're tossing hard-earned money out the window.

Well that's something you'll never have happen when you use Wolverine Roll-O-Tube. Here's top quality copper refrigeration tube in a round carton that protects unused tube to the very end. Here's how it works.

Suppose you need a 10-foot length of tube. All you have to do is remove the gummed identification tape from the carton's outer edge—connect the tube at one end—reel the carton back—cut off the required length

of tube—and leave the balance in the carton protected against damage and dirt.

In addition to the industry's most modern and useful carton Wolverine also provides its refrigeration tube with the industry's most practical end seal. It is a plastic plug that gives positive sealing against moisture and dirt—that can be used again and again—that permits the tube to be threaded easily through partitions, etc.

Next time you visit your wholesaler insist on Wolverine Roll-O-Tube. Specify Wolverine Roll-O-Tube—the round carton that provides full-time protection, work-saving convenience and top quality refrigeration tube—all at the same time.

**BUY FROM
 YOUR WHOLESALER**
BUY AMERICAN

CALUMET & HECLA, INC.
 CALUMET DIVISION
 WOLVERINE TUBE DIVISION
 FOREST INDUSTRIES DIVISION
 CALUMET & HECLA
 OF CANADA LIMITED
 CANADA VULCANIZER AND
 EQUIPMENT COMPANY LIMITED



WOLVERINE TUBE

Division of Calumet & Hecla, Inc.
 17220 SOUTHFIELD RD. • ALLEN PARK, MICH.

Manufacturers of Quality Controlled Tubing and Extruded Aluminum Shapes

5702

PLANTS IN DETROIT, MICHIGAN, AND DECATUR, ALABAMA. SALES OFFICES IN PRINCIPAL CITIES

EXPORT DEPARTMENT, 11 EAST 40TH STREET, NEW YORK 18, NEW YORK.

Circle No. 26 on Reader Service Card

NOVEMBER, 1957 • COMMERCIAL REFRIGERATION

***They'll want to finance it,
so call in COMMERCIAL CREDIT***



MAKE YOUR PROPOSALS COMPLETE

... most of your prospects need their cash and usual lines of credit for current operations ... make it easier for the prospect to sign on the dotted line by including financing arrangements. **COMMERCIAL CREDIT'S** Refrigeration Plan is backed by many years' experience, handling financing for thousands of commercial refrigeration and air conditioning installations. Let us show you how **COMMERCIAL CREDIT'S** method functions smoothly ... saves you time and trouble. Over 300 offices assure fast service. Call our office in your city or write **COMMERCIAL CREDIT CORPORATION**, Commercial Credit Building, Baltimore 2, Maryland.

A service offered through subsidiaries of Commercial Credit Company, Baltimore ... Capital and Surplus over \$200,000,000 ... offices in principal cities of the United States and Canada.

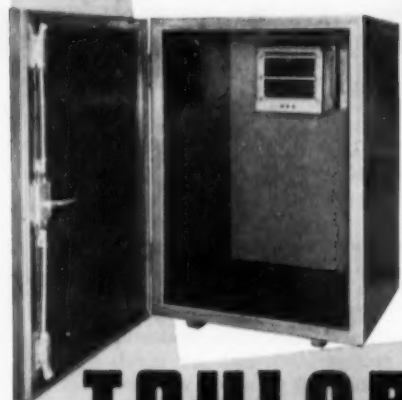
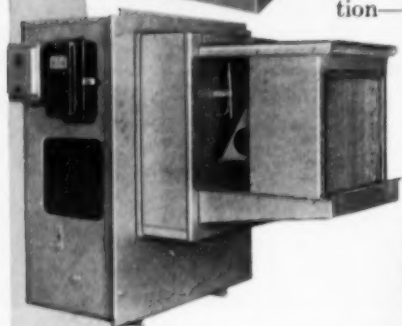
Circle No. 27 on Reader Service Card

COMPLETE LINE

TAYLOR-BURCH

packaged

COOLER UNITS



Here is the complete line of **packaged** cooler units for all installations and conditions. **FREEZERS • COOLERS • ICE HOLDING UNITS**

All are absolutely automatic in operation—merely set controls at desired operational temperature. . . . Defrosting is automatic. Installation is simple and easy—requires no technical knowledge or tools—no lost floor space. The entire electrical system is encased and the gas and oil charge are hermetically sealed in.

**MODELS AVAILABLE IN
TEMPERATURE
AND
HUMIDITY
FOR ALL APPLICATIONS**

All models are adaptable to single or multiple installations and all machines are designed to operate in extremely high temperatures.

Dealer Inquiries Invited

Write for detailed specifications.

TAYLOR-BURCH

REFRIGERATION PRODUCTS INC.

2524 BROOKLYN ROAD

JACKSON, MICHIGAN

WE SPECIALIZE IN DEVELOPMENT AND DESIGN OF SPECIAL REFRIGERATION EQUIPMENT AND THE MANUFACTURE OF PARTS AND SUB-ASSEMBLIES FOR PRODUCTION RUNS

Circle No. 28 on Reader Service Card

As

We

See

It..

Air conditioning sales should be helped by the new ruling from Federal Housing Administration to the effect that room air conditioners will be included in the FHA valuation in determining the market value of the home.

FHA also came up with new policy determinations regarding monthly expense of air conditioning, which should help industry make further inroads into new home markets.

• • •

Does a house with properly balanced indoor "weather" contribute to a family's emotional stability? Psychologists, air conditioning engineers and manufacturers have long been searching for the answer.

Now the nation's women have been trying to provide the solution. As delegates to the Congress on Better Living, 100 of them met at the Shoreham Hotel in Washington for their first annual three-day conference.

One of the first targets of their inquiry was the accuracy of the present market studies which indicate that this country is about to explode into a fantastic new building of one-to-two million housing starts a year, with 1958 and 1959 marking the "get set" period for the decades of the 1960's and 1970's.

• • •

None of us, at least in the air conditioning business, can find very much to argue with in the assertion that properly balanced indoor weather means a happier home.

We also know that families are moving to the suburbs, that they're getting larger, that incomes are



coming **NOW** from
the Combined Facilities of

DUNHAM-BUSH

...these Advanced-Design
Products to **SPARK YOUR SALES**

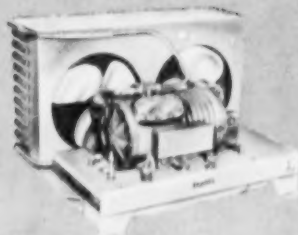
heat-x

BRUNNER
SINCE 1906

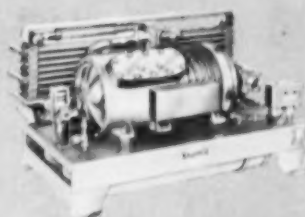
BRUNNER-METIC 3, 5 and 7½ H.P. UNITS

These 4 and 6 cylinder motor compressors and condensing units in 3, 5 and 7½ H.P. units offer you even greater flexibility in unit selection in the already diverse Brunner line. Backed by the simplest, most complete, most satisfactory warranty program in the industry, together with a nationwide parts depot, you'll find the Brunner-Metic line a wise selection for all your refrigeration and air conditioning jobs.

BRUNNER
SINCE 1906

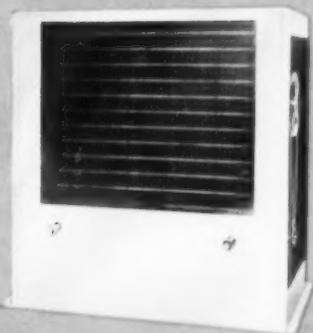


5 H.P. AIR COOLED
BRUNNER-METIC



7½ H.P. WATER COOLED
BRUNNER-METIC

heat-x



HEAT-X 'ARPC' PACKAGE CHILLERS

These air cooled package chillers, designed primarily for residential air-conditioning applications, are furnished with 2, 3 or 5 H.P. compressors and Inner-Fin air cooled condensers. Water chillers, superheaters, blower fan, and necessary controls, together with a cabinet finished in blue aluminum paint complete the package.

AIR COOLED
INNER-FIN
CONDENSER



BLOWER FAN
AND HOUSING

WATER
CHILLER

MODEL	TEMP. OF WATER OUT °F	CAPACITY	BTU/HR
ARPC 200 (2 H.P.)	40° 50°	18,200 22,300	16,900 20,900
ARPC 300 (3 H.P.)	40° 50°	29,200 34,800	27,200 33,400
ARPC 500 (5 H.P.)	40° 50°	51,000 61,500	47,800 58,200

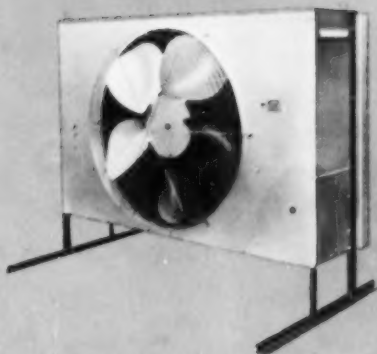
'RCU' models (less water chiller) were designed for use with remote direct expansion coils.

'BC' BLOWER CONDENSERS AIR COOLED — 5 to 50 TONS

Dunham-Bush 'BC' Blower Condensers provide the answer to excessive water costs, limited supply, excessive impurities or disposal problems . . . permit air conditioning and refrigeration systems to operate without water.

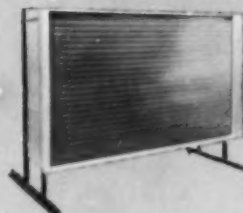
'BC' Blower Condensers feature low noise level that assures quiet operation.

Patented Inner-Fin coil construction, a Dunham-Bush exclusive, makes these the most compact units on the market. Easy-to-install units are available arranged with either blower fan or propeller fan.



MODEL	CFM/HQ AT EVAPORATOR	THERMAL TONS	CFM	OVERALL DIMENSIONS					
				BLOWER UNITS			PROPELLER UNITS		
				Width	Height	Depth	Width	Height	Depth
BC-500	60,000	5	5,000	41 1/2"	47 1/4"	34 1/2"	41 1/2"	47 1/4"	26 1/2"
BC-750	90,000	7.5	7,500	59 1/4"	47 1/2"	39 1/4"	59 1/4"	47 1/2"	26 1/2"
BC-1000	120,000	10	10,000	69 1/2"	55 1/4"	45"	69 1/2"	55 1/4"	31 1/2"
BC-1500	180,000	15	15,000	75 1/2"	67 1/2"	53"	75 1/2"	67 1/2"	31 1/2"
BC-2000	240,000	20	18,000	94 1/2"	67 1/2"	45"	94 1/2"	67 1/2"	31 1/2"
* BC-3000	360,000	30	25,000	—	—	—	129 1/2"	79 1/2"	31 1/2"
* BC-4000	450,000	37.5	36,000	—	—	—	162 1/2"	80 1/2"	31 1/2"
* BC-5000	565,000	47	40,000	—	—	—	162 1/2"	80 1/2"	33 1/4"

*Propeller Fan Only



DUNHAM-BUSH

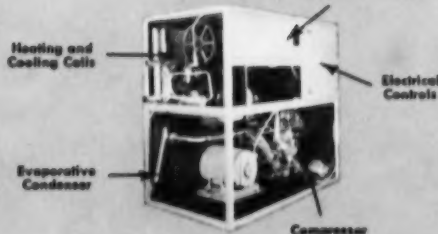


Conditioned Air
Blowers and Housing

'CPU' COMMERCIAL PACKAGE UNITS

Pre-engineered units . . . each a complete air conditioning system housed in one cabinet. Each unit is entirely self-contained . . . with evaporator, compressor, evap condenser and pump, fans, motors, piping and controls . . . all pre-engineered for peak operating performance at minimum operating cost. Installation requires only connection of power supply to control panel, connection of water make-up line and necessary duct connections. All units are shipped with a holding charge of Freon.

Units feature patented Inner-Fin cooling coils; quiet operating compressors; and forced-draft, blow-through type Inner-Fin evaporative condensers. Available in 10, 15, 20, 30 and 40 Ton models.



MODEL	THERMAL COOLING CAPACITY BTU/HQ	SUPPLY AIR CFM	OVERALL DIMENSIONS		
			Width	Depth	Height
CPU 10	120,000	3600	75"	45 1/2"	65"
CPU 15	180,000	5250	75"	45 1/2"	72"
CPU 20	240,000	7000	80"	54 1/2"	87"
CPU 30	360,000	10,500	131"	60 1/2"	89"
CPU 40	480,000	14,000	144"	63 1/2"	94 1/2"

Dunham-Bush, Inc.

WEST HARTFORD 10 • CONNECTICUT • U. S. A.

MICHIGAN CITY, IND. • MARSHALLTOWN, IOWA • RIVERSIDE, CAL. • UTICA, NEW YORK

SUBSIDIARIES

HEAT-X, INC. THE BRUNNER CO. DUNHAM-BUSH (CANADA), LTD. DUNHAM-BUSH, LTD. BRUNNER CORPORATION
BREWSTER, N.Y. GAINESVILLE, GA. TORONTO, CANADA LONDON, ENGLAND (CANADA) LTD.
PORT HOPE, ONTARIO

DUNHAM-BUSH

heat-x

BRUNNER
SINCE 1855

getting larger, and that people are on the prowl for more and better things for their homes and families.

Women, to be sure, are certain to be an important factor in deciding which way the home air conditioning business will go in the next few years. But they won't be the only factor . . . there'll be plenty of air conditioning salesmen who'll help "decide" the trend, too.

The immediate job of the air conditioning industry is to make sure that the men who are going to handle the selling job know what they're doing.

* * *

What's a buyer afraid of? Negative factors existing in the minds of buyers build up a barrier of resistance which is difficult for the average salesman to overcome, says a recent issue of *Salesense*, bi-weekly publication of sales information published by a Rochester, N. Y., firm of personnel development specialists.

The fear of making a decision, reports *Salesense*, is one of the buyer's outstanding negatives. Saying "yes" involves a responsibility on the part of the buyer. It may lead to future criticism or loss. It can affect the buyer's earnings — and even his standing in the company.

* * *

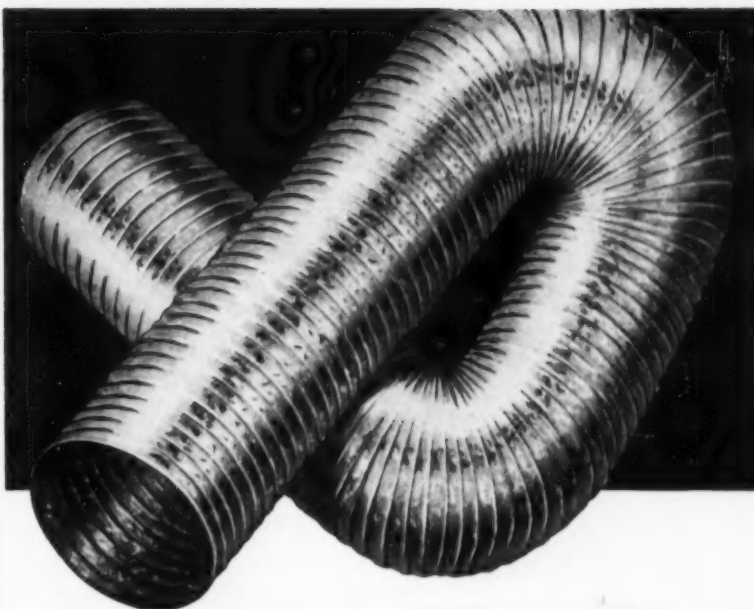
To overcome this, the salesman should avoid questions that might get a "no" answer early in the interview. A buyer's fear of strangers is another strong negative, according to the article.

The salesman can surmount this by furnishing the buyer with recommendations of mutual friends, mentioning names of customers the buyer knows, and establishing his identity as a representative of a well-known company.

TRANE CO. OPENS SAN DIEGO SUB-OFFICE

Trane Co. has established a sub-office in San Diego.

Ralph C. Snow, Trane sales engineer in Los Angeles for 11 years, has been transferred to the new subsidiary of his former office.



facts about Thermaflex®

that will help you solve
your ducting problems

What is Thermaflex?

A lightweight, flexible ducting made of a spring steel wire helix covered with a three-ply reinforced laminate of woven fiber glass and metallic sheeting.

What are its applications?

Thermaflex is designed to supply air at temperatures ranging from 0°F. to 250°F. It is mainly used as a connector between main lines and diffusers or sound boxes in heating and air-conditioning systems.

What about installation?

It installs faster than rigid ducting at savings up to 32%. One man can do the job without special tools or fittings in just a few minutes.

Is it flame resistant?

Thermaflex will stand 1200°F.* without any sign of combustion or melting. The covering used in its construction is approved by Underwriters' Laboratories, Inc.

What pressures will Thermaflex handle?

25 psi, which is 5 times the minimum standards of the New York Board of Standards and Appeals.

How long will it last in service?

Much longer than rigid metal ducting. It is impervious to moisture, rust, rot, fungus and mildew.

How flexible is Thermaflex?

It takes tight bends with a radius equal to half its own diameter with practically no decrease in cross-sectional area.

How is Thermaflex sold?

In a wide variety of diameters in standard 12-foot lengths that can be easily spliced or cut for long or short runs.

How can I make sure that Thermaflex will solve my problems?

Write us, outlining your requirements. Our engineers will be glad to put their experience to work for you. Write Dept. 6N.

*As approved by the New York Board of Standards and Appeals.

Flexible Tubing

CORPORATION

GUILFORD, CONNECTICUT • LOS ANGELES 64, CALIFORNIA

Circle No. 30 on Reader Service Card



Circle No. 29

McQuay QUALITY

A Crystal Tips HERITAGE

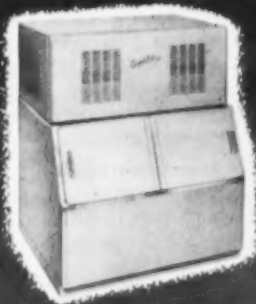


Crystal Tips dealers never worry about quality. They know the McQuay tradition for quality is the heritage of every Crystal Tips Ice Maker. The research, experience and "know-how" gained by McQuay over the years are extra values that are built into every Crystal Tips Ice Maker.

The McQuay name has been respected in the industry for more than twenty-five years. It is not only respected, but it has earned a reputation as well, for the design, engineering and manufacture of first quality heat transfer equipment. Out of this outstanding background has come the famous Crystal Tips 2-in-1 Ice Making feature. Only Crystal Tips has this remarkable *sales maker* incorporated in every ice maker in the line.

NEW MODEL B-500-B — 2-in-1 ice service and large capacity combined in one space saving model. Produces $\frac{1}{4}$ ton of cubes or chips per day — 9,000 cubes or 36,000 chips.

MODEL B-200-B — Convenient under-counter design, 24 hour capacity storage bin. Produces 3700 cubes or 14,750 chips per day.



MODEL B-300-B — Dependable, trouble-free operation; produces 4,500 cubes or 17,000 chips per day. Full width access doors standard on all models.



It pays to handle Crystal Tips 2-in-1 Ice Makers . . . the line backed by McQuay quality. For complete dealer and distributor profit opportunities write today or visit BOOTH 503 — ARI SHOW — Nov. 18-21.



A M E R I C A N
A U T O M A T I C I C E M A C H I N E C O .

1770 Fourth Street N.W., Fairbault, Minnesota

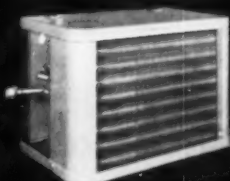
A Subsidiary of McQuay, Inc.

IN CANADA: FRONTIER COMMERCIAL REFRIGERATION, LTD., 1470 The Queensway, Toronto 4, Ontario

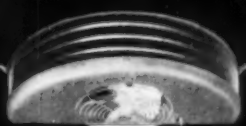


**A Complete LINE OF REFRIGERATION PRODUCTS
WITH Complete ENGINEERING "KNOW-HOW"**

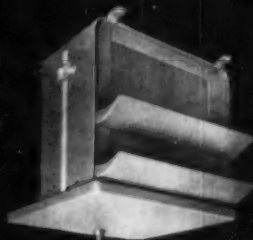
BY *McQuay*



TWO WAY UNIT COOLERS—5 sizes
800 to 9000 BTU/Hr.



RADIAL UNIT COOLERS—8 sizes
2000 to 21,000 BTU/Hr.



PACEMAKER UNIT COOLERS
10 sizes—4500 to 88,000 BTU/Hr.

**High
Temperature
Unit Coolers**



HOT GAS DEFROST UNIT COOLERS
5 sizes—3000 to 45,000 BTU/Hr.



LOW TEMPERATURE PRODUCT
FREEZERS—5 sizes—12,000 to 90,000 BTU/Hr.



SPEED TUNNEL
FREEZERS—8 Models—
10,500 to 30,000
BTU/Hr.

**Low Temperature
Product Coolers
and Freezers**

SEE
McQuay

at the Air Conditioning
and Refrigeration
Industry Exposition
Chicago International
Amphitheatre
Nov. 18-21
Booths 501-502-503



Condensers

When you sell McQuay refrigeration products, you sell a line that is complete, and a line that brings you year 'round profit. You also sell a line that is completely engineered and backed by the know-how that has made McQuay famous. McQuay has the abilities and also the facilities to make the very finest equipment. McQuay, Inc., 1643 Broadway St. N.E., Minneapolis 13, Minnesota.



EVAPORATIVE CONDENSERS
Centrifugal Fan Type
3 sizes—3 1/2, 6 and 12 tons

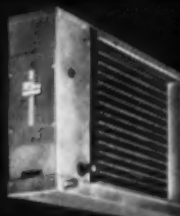


REMOTE AIR COOLED
CONDENSERS—Centrifugal Fan Type
4 sizes—6, 8, 10 and 12 tons



REMOTE AIR COOLED
CONDENSERS—Propeller Fan Type
11 sizes—2 to 50 tons

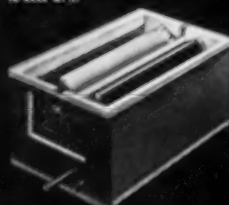
**Air Conditioners
and Evaporators**



HORIZONTAL EVAPORATORS
4 sizes—2, 3, 5 and 7 1/2 tons,
27,500 to 92,100 BTU/Hr., 800
to 3000 CFM



CEILING MOUNTED AIR
CONDITIONERS—Unlimited number
of sizes and types, 200 to 3000
CFM; 6250 to 127,400 BTU/Hr.



VERTICAL EVAPORATORS
4 sizes—2, 3, 5 and 7 1/2 tons,
27,500 to 92,100 BTU/Hr., 800
to 2800 CFM



FLOOR MOUNTED SEASONMAKERS
4 models from 350 to 800 CFM, 6250
to 21,800 BTU/Hr.

McQuay
Means Quality

AIR CONDITIONING • HEATING • REFRIGERATION



McQuay INC.

NOW GENERAL ELECTRIC AIR CONDITIONING AS

*Lightest 30-ton unit in the business—
by as much as 2000 lbs.—
and completely self-contained*

This new General Electric Unit is not another "octopus" —no outside fan motors, filters, controls or other protruding parts. It's as clean-cut as a 3-ton job. Air discharge can be ducted from front, back or top. And it's up to 2000 lbs. *lighter* than other 30-ton units.

General Electric also announces new 20 and 25 ton "packages". These 3 new models, added to the existing units, give you a line to meet *every* requirement for commercial and industrial air conditioning.

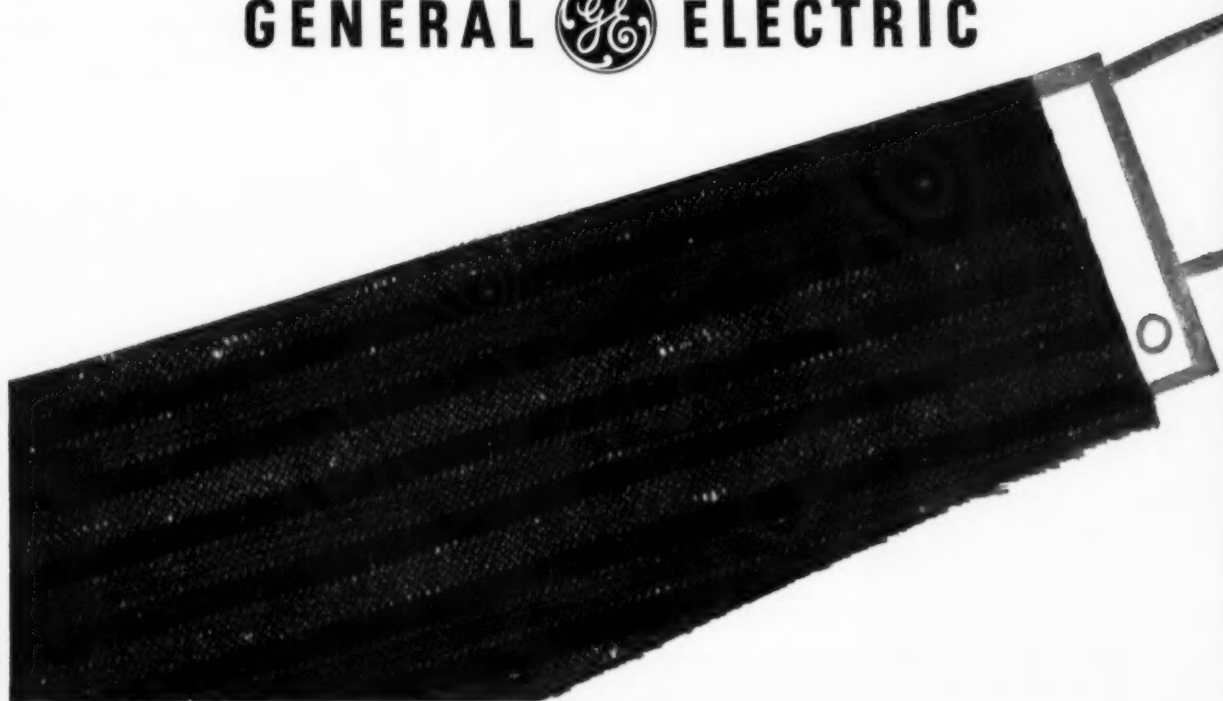
And what a line! Floor-mounted units in 3, 5, 7½, 10,

15, 20, 25 and 30 ton capacities! New air-cooled split systems in 3, 4, 5, 7½ and 10 ton capacities! And self-contained ceiling-mounted units—air-cooled in 3 and 5 ton capacities—water-cooled in 3, 5 and 7½ ton capacities! And there's more to come in 1958!

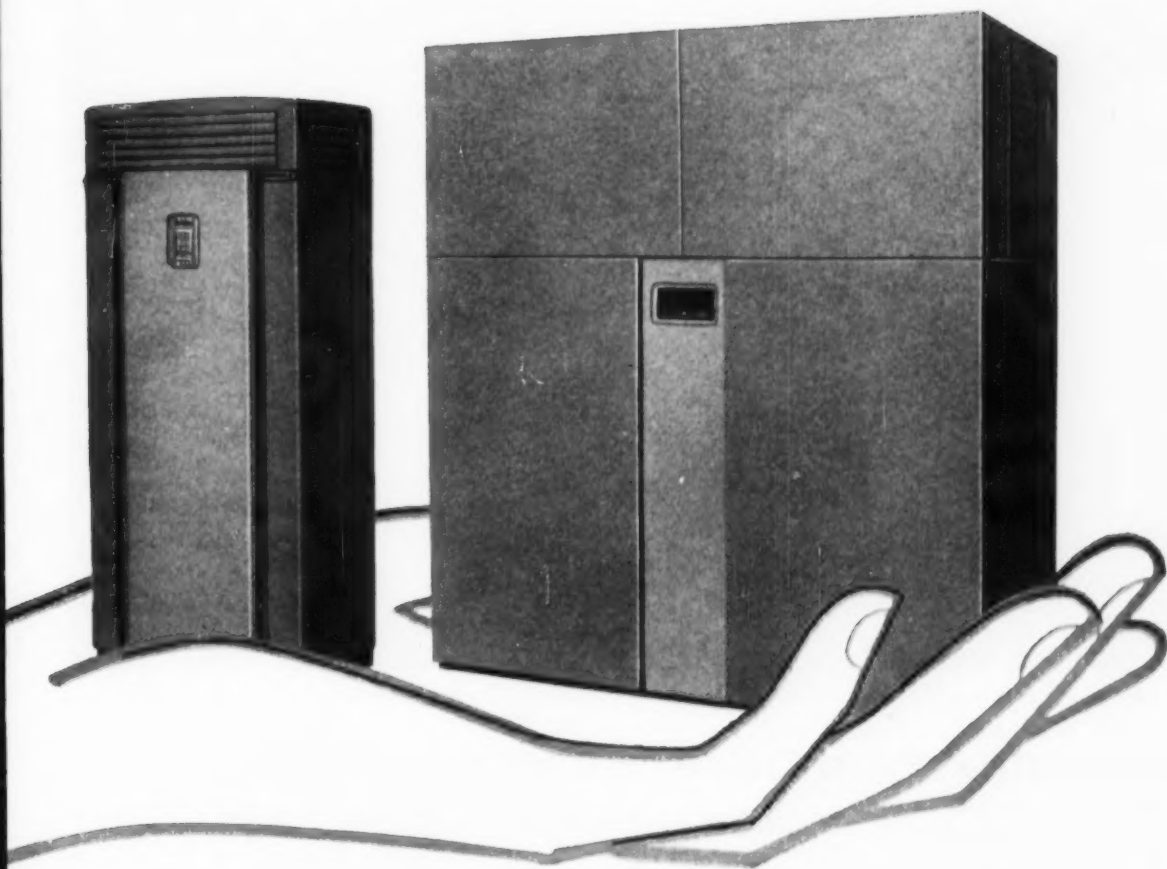
Get on the bandwagon! Sell General Electric Zone-by-Zone Air Conditioning for more profit in 1958! General Electric will presell prospects for you with powerful advertising, sales promotion and direct mail. See your distributor or mail coupon for complete details.

Progress Is Our Most Important Product

GENERAL  ELECTRIC



PACKAGES 30 TONS OF NEATLY AS 3 TONS



**Commercial and Industrial
Air Conditioning**

Mr. R. D. Roley
General Electric Company, Dept. B-6
Commercial and Industrial Air Conditioning
5 Lawrence St., Bloomfield, N. J.

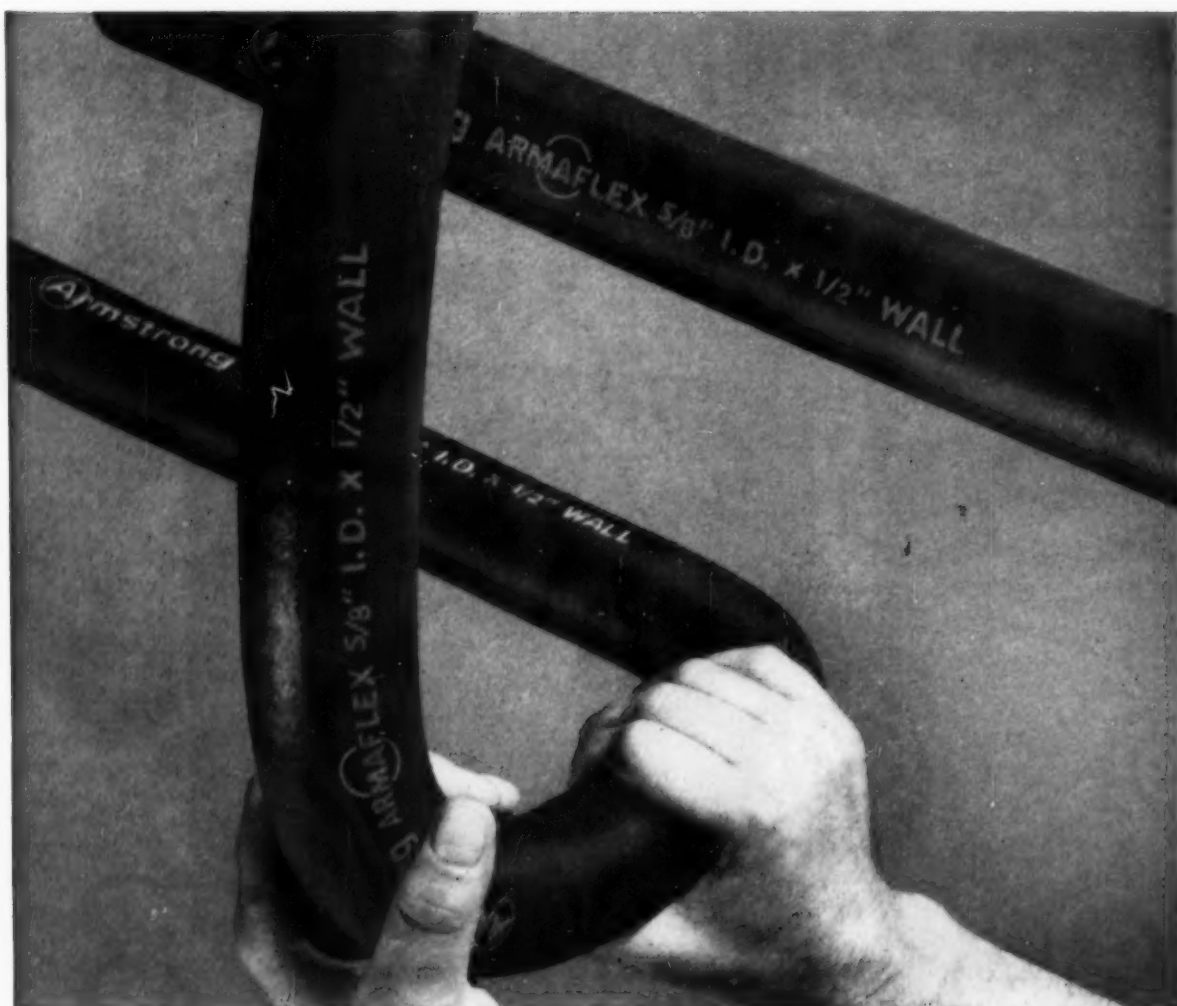
I'm interested in doing business with General Electric in
1958. Please give me complete details.

Name _____

Firm Name _____

Address _____

City _____ Zone _____ State _____



Just slip Armaflex over pipe or tubing before making connections. Highly flexible, Armaflex follows contours without special cutting.

Armaflex Pipe Covering goes on fast, cuts labor costs in half



The great flexibility of Armstrong Armaflex® helps you speed the insulation of fluid cooling and heating lines. In fact, many users report that Armaflex goes on so fast that labor costs drop 50% to 70%, compared with the cost of applying wrap-on type insulations. Just slip Armaflex on pipe or tubing before connections are made—it follows contours readily. A talc coating inside makes application extra easy. If piping is already in use, slit Armaflex with a sharp knife, snap in place, and seal the joints with Armstrong 520 Adhesive.

No separate vapor barrier is needed, because Armaflex's closed cell structure completely seals out air and moisture. Highly efficient, Armaflex stops condensation on cold lines, saves heat on hot lines operating up to 200° F. You can get Armaflex in 6' lengths for pipes and tubing up to 3½" o.d.

Free booklet gives details. For your copy, write to Armstrong Cork Company, 2211 Rumford Avenue, Lancaster, Pennsylvania.

Armstrong INSULATIONS

Circle No. 34 on Reader Service Card

NOVEMBER, 1957 • COMMERCIAL REFRIGERATION

**THINGS WILL REALLY BE
OUT-OF-THIS-WORLD
AT THE 10th
EXPOSITION . . .**

**see all the big stars
at booth
446**



SIGHTMASTER LIQUID INDICATORS



GLOBEMASTER PACKED VALVES



DRYMASTER FILTER DRIERS



LINEMASTER VALVES



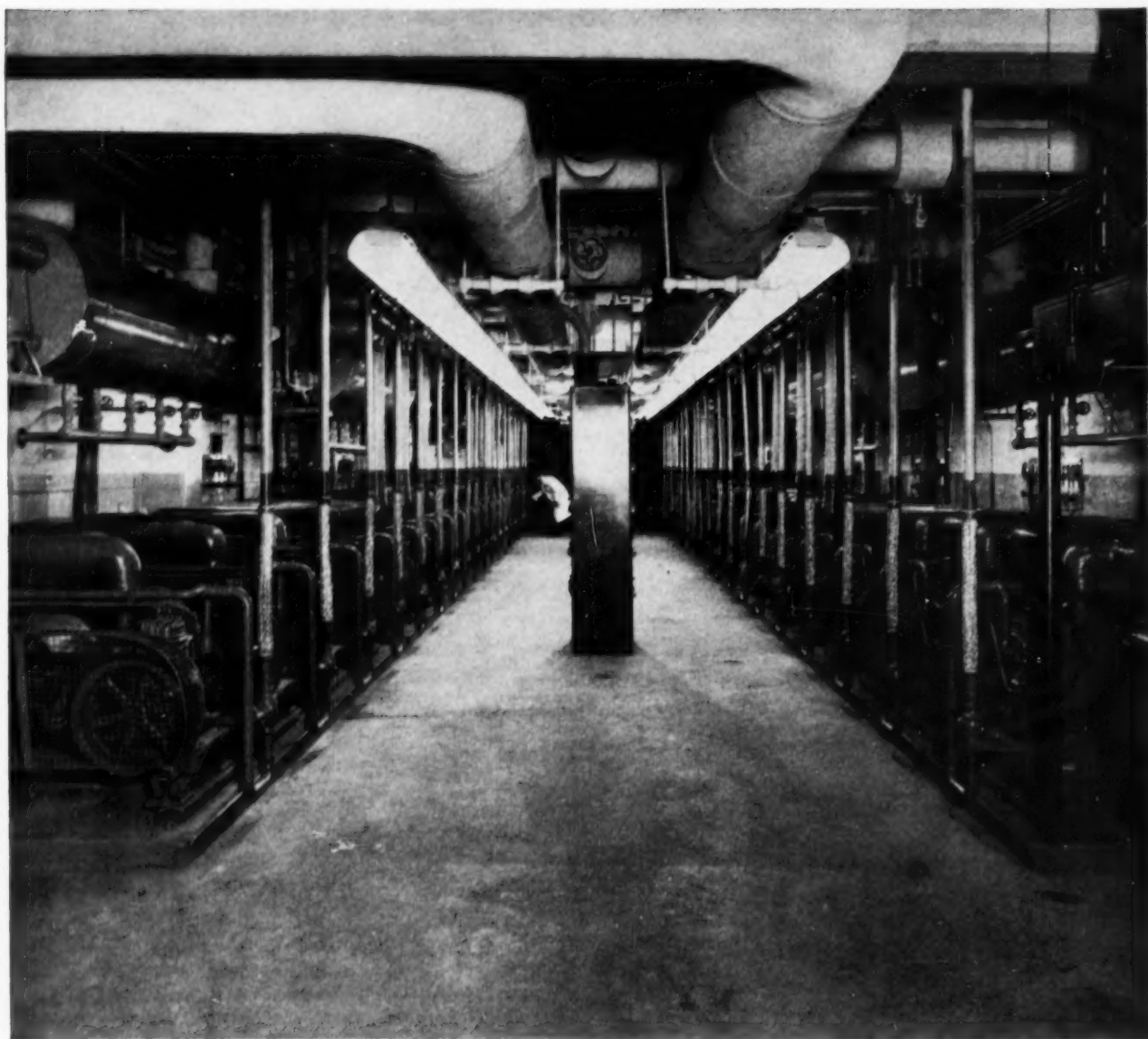
SAFETYMASTER RELIEF VALVES

Make Booth 446 your first (and last) stop at the 10th Exposition of the Air-Conditioning and Refrigeration Industry, November 18-21, at Chicago's Amphitheatre. See the newest and most outstandingly complete line of new products from Mueller Brass Co. We'll be looking for you . . . we've got a lot of surprises in store for you at Booth 446.



MUELLER BRASS CO. PORT HURON 14, MICHIGAN

Circle No. 35 on Reader Service Card



AMERICAN VIBRATION ELIMINATORS have been installed in piping of 20 chillers, 20 evaporative condensers, and 60 twenty HP compressors that provide the air conditioning requirements for the Research Center of a major automobile manufacturer.

Major automotive manufacturer shows how you can

Stop vibration and noise once and for all —with American Vibration Eliminators

Noise and vibration in piping are cause for concern on any job. In a research laboratory, where delicate instruments can be upset by the slightest sound or movement, they are unthinkable.

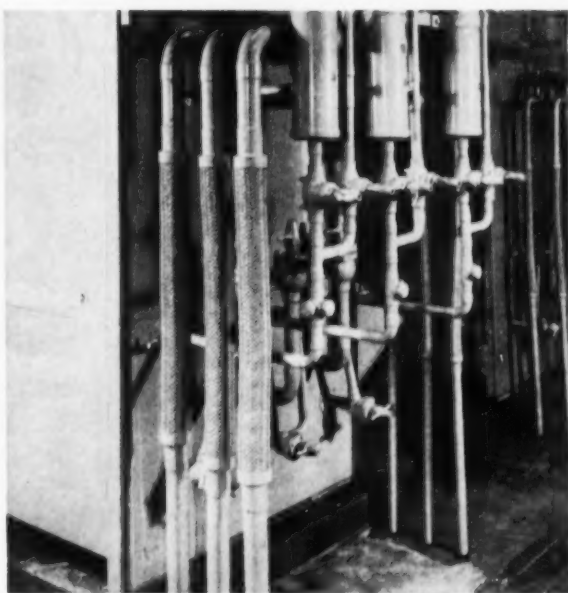
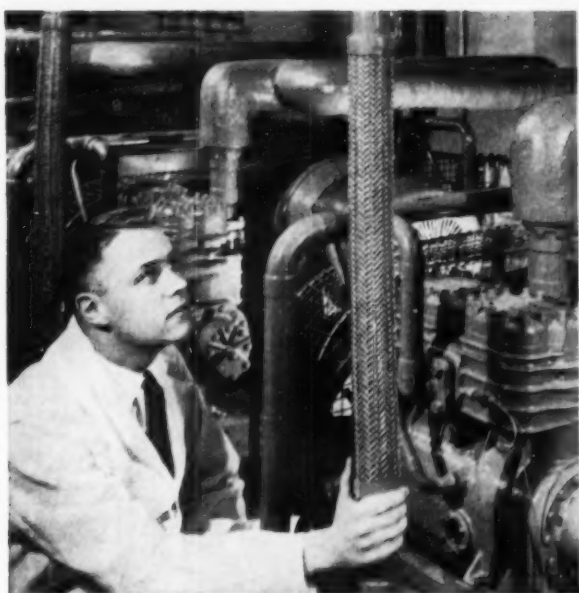
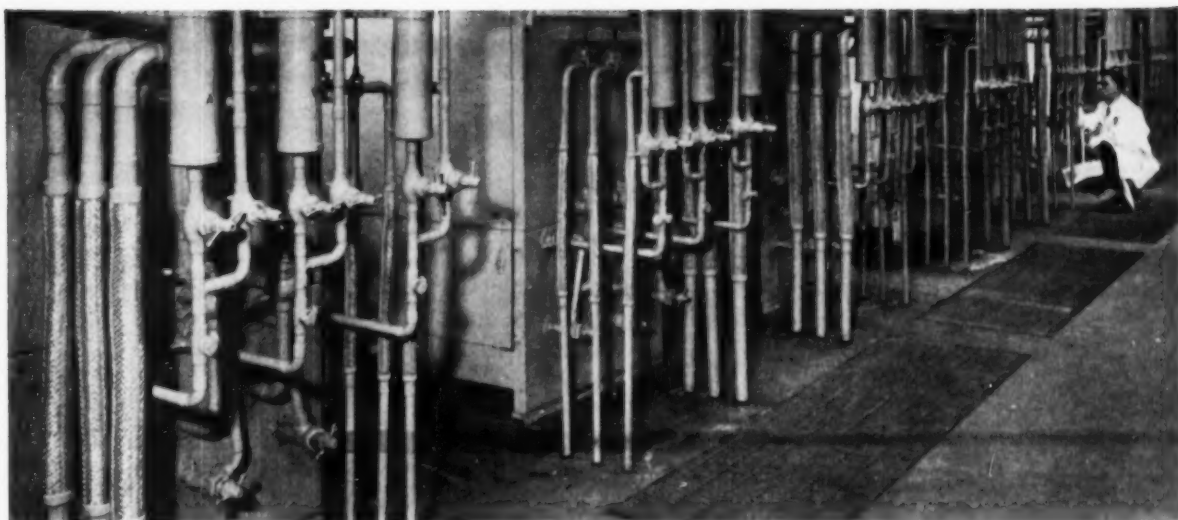
What to do about it? A major automobile manufacturer installed special lengths of American Vibration Eliminators on 100 pieces of air con-

ditioning equipment in its Research Center. They reduce, to a minimum, transmission of sound and vibration through the piping.

To minimize vibration transmission through the walls of the building, all compressors were spring-mounted—thus putting the VE's to particularly severe performance tests. Results—not one failure of a unit in all the time of its operation.

Circle No. 36 on Reader Service Card

NOVEMBER, 1957 • COMMERCIAL REFRIGERATION



YOU CAN USE AMERICAN VE's WITH CONFIDENCE BECAUSE

The right metal does the job. The special tin-bronze alloy — the result of American Brass metallurgical research — is tailored for the refrigeration and air conditioning industries.

Double bronze braid where extra protection is needed. On all American VE's 2½" O.D. or larger.

Clean, dry, tested, protected. Snip the end of the vapor-proof polyethylene bag and you have a factory-fresh unit to install in the line . . . clean, inside and out!

"American" quality materials, construction, packaging mean less maintenance, prevent loss of costly refrigerants, etc. Specify the Quality Eliminator marked "American" on the ferrule.



Listed by Underwriters' Laboratories through sizes 3½" O. D.

For descriptive folder write: The American Brass Co., American Metal Hose Division, Waterbury 20, Conn. In Canada: The Canadian Fairbanks-Morse Co., Ltd.

87710

WHEREVER CONNECTORS MUST MOVE

AMERICAN

For American Vibration Eliminators
see your

ANACONDA®

Distributor

**ON ALL COMMERCIAL REFRIGERATION - AIR
CONDITIONING AND AMMONIA INSTALLATIONS**

look to **SPORLAN**

for Peak Performance Right Down the Line

*...for only
SPORLAN
can offer you
Catch-Alls,
Solenoid Valves,
Thermostatic
Expansion Valves,
Refrigerant
Distributors...
and the
Level Master
Control,
as a
perfectly matched
team
for
Right
Down the Line
Peak Performance
...regardless
of job size!*



Be sure
to see us at Booth Nos. 323-325,
ARI 10th Exposition
November 18-21, 1957

SPORLAN VALVE CO.

7525 SUSSEX AVE.

ST. LOUIS 17, MO.

EXPORT DEPT. AD. AURIEMA, INC., 85 BROAD ST., NEW YORK 4, N. Y.

Circle No. 37 on Reader Service Card

NOVEMBER, 1957 • COMMERCIAL REFRIGERATION

Now—Especially designed for
REFRIGERATION and AIR CONDITIONER Servicing

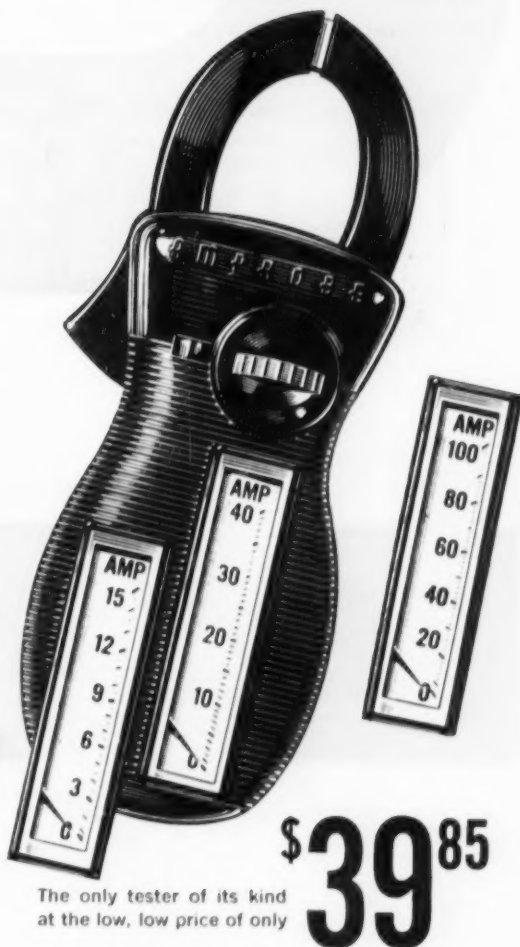
AMPROBE RS-2

Rotary-scale volt-ammeter

**150/300
VOLTAGE RANGES***

NOW! A great new rotary-range AMPROBE with all the voltage and current ranges you need most. Here's why AMPROBE RS-2 is 4 ways easier to read than any other test instrument you ever used.

1. SEE ONLY ONE SCALE AT A TIME. 4 current ranges, 2 voltage ranges—each on a scale of its own. Every range you need—all on one time-saving tester! **2. ONE HAND-OPERATION!** Range selector knob is right next to your thumb. **3. NEW MAGNIFIED DIAL...** LONGER SCALE LENGTH. Greater visibility, greater accuracy than ever before. **4. POINTER-LOCK "FREEZES" POINTER AT READING.** Use the RS-2 any place your hand can reach—Needle can be locked in place so that you may read it away from conductor.



\$ **39⁸⁵**

The only tester of its kind
at the low, low price of only

*don't guess at it; **AMPROBE IT!***

There's an AMPROBE for every job and every budget

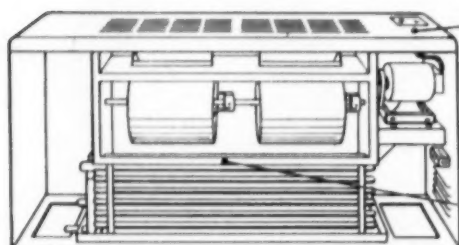
PYRAMID INSTRUMENT CORPORATION, Lynbrook, N. Y.

Never such flexibility and dependability at such low cost

Honeywell's complete line of temperature controllers—

For Unit Air Conditioners

—with fan-coils, using hot or chilled water.

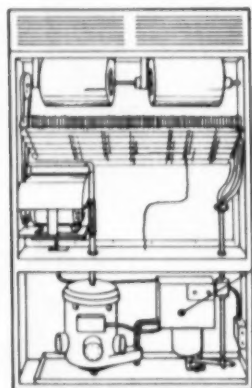


L6018A—a one stage control responsive to temperature changes in the return air. Has extended knob and can be mounted in any position, vertical or horizontal.

L6018 B&C — change-over controllers which automatically index the system for heating or cooling. Eliminates costly adjustment trips through building.

For Packaged Store Coolers

—for both one-stage and two-stage conditioners.



L6018A—For one-stage air conditioners.



L6018D—For two-stage air conditioners. The L6018-D is a two-stage controller which responds to temperature change in the return air.

Offer your air conditioners already packaged with Honeywell Temperature Controls. Get full information by calling your local Honeywell office. Or write Minneapolis-Honeywell, Dept. CR-11-273, Minneapolis 8, Minnesota.

*All Honeywell Temperature Controllers
boast these outstanding features:*

- Flexibility—available with or without case for easy mounting in or outside of unit in *any* position.
- Fast-acting response with narrow differential.
- Dependable switching action with MICRO SWITCH switches.
- Compact, with extended shafts or knobs for quick and easy manual setting of return air controllers.

Honeywell

 *First in Controls*

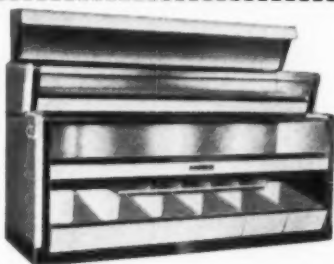
Circle No. 39 on Reader Service Card

when you **SELL PINNACLE** you sell Quality Construction...Unmatched Performance...up-to-the minute styling!

All Purpose Self Service DAIRY CASE

Designed for the smaller store, this Super Market Design Dairy Case has large product capacities in a minimum of floor space. Features include: Three refrigerated display areas; beautiful flood lighting of products; large area merchandising shelf on top of super structure; heavy stainless steel cart rail; gleaming white porcelain exterior and interior. The lifetime finish will not discolor; low accessible merchandising levels, etc.

Length: 78" Height: 58" Depth: 34".
Condensing Unit required:
1 h. p. air cooled.



Single Duty DISPLAY CASE

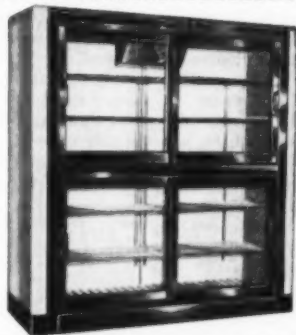
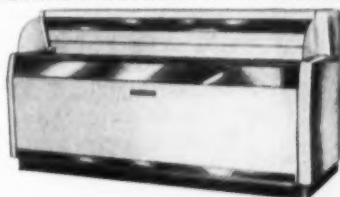
Available in 6', 8', 10' and 12' lengths. Self contained models also available.

Here is the most wanted Produce and Fruit Case on the market! Note the large storage and display areas. Features include: removable storage bins; fluorescent lighting; gleaming white lifetime porcelain; goes through 36" doorway; low operating cost, etc.

Automatic Self Defrosting FREEZER

Designed especially for the smaller store, this Freezer offers large product capacities in a minimum of floor space . . . low operating cost . . . fast, automatic electric defrost does not effect product . . . lifetime porcelain. 24.2 cu.ft. package capacity — approx. 1248 10 oz. food pks.

Length: 90" Height: 49 1/2" Depth: 35"



Wall Type BEVERAGE CASE

Model W8526 pictured here is 6' wide; 78" high and 30" deep.

Every Store, Restaurant, Tap Room, Hotel a customer for this Beverage Case! Has many plus features including: easier rolling doors; better insulated doors and jambs; lifetime finishes, etc. Self-contained Models — 5' long, 27" deep; 5' long, 34" deep. Remote Models — 4' 4 1/2" long, 24" deep; 4' 4 1/2" long, 30" deep; 6', 8' and 10' long, 30" deep.

Write today for full information and illustrated literature on the complete Pinnacle Line. BIG PROFITS FOR YOU — MR. DEALER!

Pinnacle
EQUIPMENT CORPORATION
FLEETWOOD, PENNSYLVANIA
EXPORT DEPT.—39 Broadway, New York

Service-Master

for '57 is

BIGGER



Compartments are now 14½" deep... 2" deeper than ever. More space for large boxes and cans—for more tools, parts, and supplies, too. Cargo area, which stretches 48½" between compartments, has a tread-plate steel floor that really fights back when it comes to rough treatment. Models for old or new ½, ¾, 1, and 1½ ton chassis.

Available for immediate delivery in all 48 states

Optional equipment includes telescopic roof, ladder racks, pipe racks, vise bracket, and bumper-step. Canopy Top, shown here, furnishes more fully-enclosed cargo area.



You get all these NO-CHARGE EXTRAS

- Nylon bushings in all door hinges—doors can't bind.
- Bins with adjustable dividers—plus a hinged cover that keeps parts in place.
- Key-locking doors—made from two steel panels for super strength.
- Ready-for-work shelves and bins—built right in the body.

McCABE-POWERS AUTO BODY CO.

5900 NORTH BROADWAY
ST. LOUIS 15, MO.

625 CEDAR STREET
BERKELEY 10, CALIF.

McCABE-POWERS AUTO BODY COMPANY
5900 North Broadway, St. Louis 15, Mo.

Please send me descriptive literature and name of my nearest SERVICE-MASTER distributor.

NAME _____ TITLE _____

COMPANY _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

57A

It's the LAW!

by Albert Woodruff Gray

Legal problems are an inherent part of operating any business enterprise. If you are beset by them, you'd better talk to your lawyer. This column, which appears periodically in the issues of *COMMERCIAL REFRIGERATION AND AIR CONDITIONING*, in no way aspires to serve as legal counsel for our readers. It is prepared, however, by a man well versed in legal practices and opinions, and by presenting digests of actual court cases involving commercial refrigeration and air conditioning dealers and contractors we hope to enable our readers to sidestep some of the legal pitfalls into which they otherwise might unwittingly stumble.

—The Editors

SERVICEMAN'S NEGLIGENCE MAKES EMPLOYER LIABLE

AFTER his repair and adjustment of an ice cream cabinet in an Alexandria, La., hamburger and sandwich shop an employee of a service company carelessly left on the counter a bottle of a 28% solution of ammonia.

Later when a customer sitting at this counter moved the bottle aside, it exploded, sending the ammonia into his face and eyes. Sustaining an award of \$2,500 against the service company in a suit brought by the customer, the Louisiana court said,

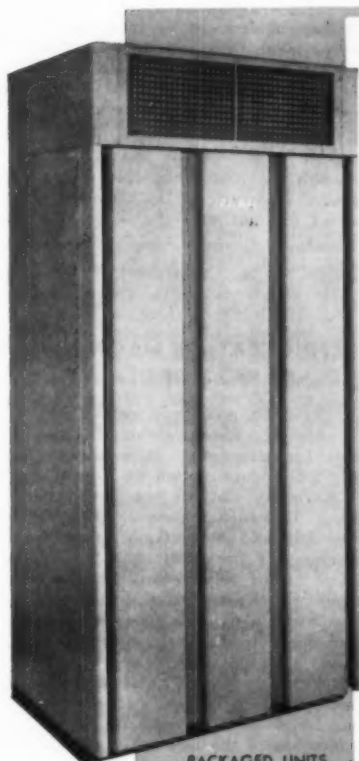
"The negligence of the agent of the company in placing the bottle on the counter and going away and leaving it there, was the sole cause of the accident and his employer is liable for the damages caused by the accident."

Norton v. Louisiana Ice & Utilities, Inc., 135 So. 717, Louisiana.

BUYER'S DAMAGES ARE ALLOWED

ON a sheet of paper folded into four pages was set out on the first page a proposal for the purchase of an automatic refrigerating machine to be applied to a box 5 x 8 x 10' and a 10' display counter. It also was stipulated that the machine should be installed within 40 days after the acceptance of this proposal and guar-

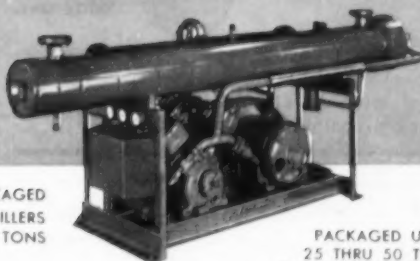
Circle No. 41 on Reader Service Card



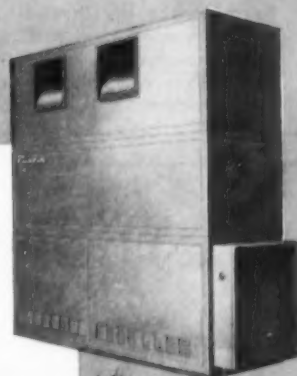
PACKAGED UNITS
3 THRU 20 TONS



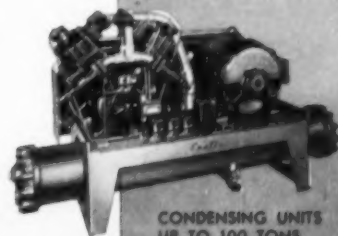
PACKAGED AIR
COOLED UNITS
UP TO 7½ TONS



PACKAGED
LIQUID CHILLERS
UP TO 100 TONS



PACKAGED UNITS
25 THRU 50 TONS
INTEGRAL EVAPORATIVE
CONDENSER OPTIONAL



CONDENSING UNITS
UP TO 100 TONS

A *Curtis* FRANCHISE

MAY BE THE ANSWER!

Curtis has been in business for 103 years and through experience has learned how to maintain a mutually profitable relationship with our franchise holders. Curtis equipment is competitively priced, quality built, and nationally advertised.

Visit Our Booth No. 559-607

**AIR CONDITIONING & REFRIGERATION EXPOSITION
INTERNATIONAL AMPHITHEATRE—CHICAGO—NOV. 18-21**

LOOK AT THE CURTIS LINE

CAN COUNT ON
REMEMBER...
YOU

Curtis

OUR 103rd YEAR

**MANUFACTURING COMPANY
REFRIGERATION DIVISION
1915 Kienlen Ave. St. Louis 20, Mo.**

CM-18



INDUSTRIAL
AIR COMPRESSOR



AIR HOISTS
AIR CYLINDERS



AUTO LIFTS

Circle No. 42 on Reader Service Card

anted to produce a temperature of 35 to 38 F. Title was to remain in the seller until payment had been made in full.

On the other pages were set forth the terms of payment and provisions for the entire unpaid balance to become due upon default. Within 30 days after the acceptance by the dealer for this proposal the contract was assigned to a finance company.

When a later suit was brought by the seller's assignee the purchaser interposed a counterclaim for damages for a breach of the warranty for the failure of the machine to attain the stipulated temperature in the same amount as the unpaid balance.

In its defense to this counterclaim

the assignee contended that the contract was a negotiable instrument acquired in the regular course of business for value and in good faith before maturity. As a consequence it was not responsible for damages of this character, which were chargeable only to the original seller.

Holding the assignee took the instrument subject to any defenses available against the original seller and that this contract was not a negotiable instrument the Texas court said,

"The instrument to be negotiable must conform to certain requirements. One of these requirements is that it must contain an unconditional promise or order to pay a sum certain in money. This instrument does not ful-

fill that requirement. At least one of the payments was conditioned upon the completion of the installation of the machine.

"There was no certainty at the time the instrument was executed that the machine would ever be installed and although the event may have subsequently happened, the happening thereof did not cure the defect."

Southwest Contract Purchase Corp. v. McGee, 296 S.W.2d 912. Texas, June 3, 1927.

REFRIGERATION MACHINE RULED PART OF REALTY

CONTRACT was made for the purchase of a 35-ton refrigerating machine for installation in a brewery then under construction in Tacoma, Wash. In this contract was the stipulation, "It is further agreed that title, ownership, and right of possession of the aforesaid machinery shall be and remain in the (seller) until the whole amount above provided of money and notes is fully paid as above agreed, when the same shall vest in the (purchaser)."

Bonds were issued later by the brewery. When suit was brought for their foreclosure the court, in its determination of the ownership of this refrigerating machine, whether title remained in the seller since there remained still unpaid a balance on the contract, or whether ownership was in the brewery by virtue of its incorporation as a part of the building, said of the controversy,

"In ascertaining whether such a machine does become a part of the realty in favor of the mortgagees, the rule is that the manner, purpose, and effect of the annexation to the freehold must be regarded. If a building be erected for a definite purpose or to enhance its value, whatever is built into it to further these objects becomes a part of it even though there be no permanent fastening, such as would cause permanent injury if removed.

"We are perfectly aware that there is a wilderness of authority on this vexed question of when the machine loses its character of chattelism and becomes a fixture to real estate and thereby a part of the realty and that there is a lamentable conflict also in the authorities. But we are satisfied to abide by the rule that the machinery in question became a part of the realty."

Wade v. Donan Brewing Co., 38 Pac. 1008, Washington.

CONTRACT RATIFIED BY SUBSEQUENT ACTIONS

FROM an engineering and supply company, the president of a Texas corporation had purchased refrigerating machinery under an agreement for the purchase of 25% of the agreed price upon delivery, a corresponding

NOW AVAILABLE A 5/8" SIZE

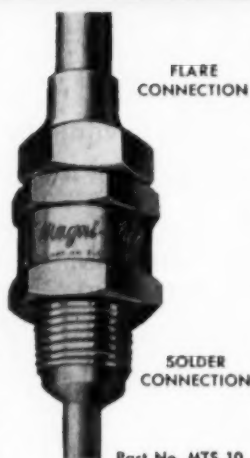
The Watsco Magni-Chek check valve with the versatile T-S* connection now offers you 50 different installation combinations with just four sizes of valves. 1/4", 3/8", 1/2", 5/8" valves.

Let Magni-Chek reduce the inventory carried in your stock room and by the service man, and give you a saving in bulk, weight, and dollars.

Only Magni-Chek offers you two very important features.

First of all, a check valve with no springs and therefore no back pressure. Only a small floating disc controlled by a lifetime alnico magnet does the work.

Secondly the T-S (thread-solder) connection, which is a standard male flare fitting with removable inserts for flare or solder or combination of both, offers complete versatility of installation with no additional parts or tools being required.



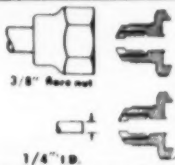
Pat. No. 2,646,071

EXAMPLE: MTS-6 (1/4")

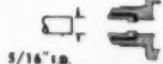


Magni-Chek can be installed in any position without affecting performance!

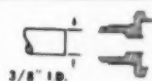
For 3/8" flare installations or 1/2" solder, allow insert to remain.




For 5/16" solder installation, remove insert.



For 3/8" solder installation, remove insert.



Visit our booth No. 235 and 236 at the 10th Exposition of the Air Conditioning and Refrigeration Industry, November 18-21.



WATSCO INC.

Send for 1957 Catalog

1020 EAST 15th STREET, HIALEAH, FLORIDA.

Circle No. 43 on Reader Service Card

amount when installation was complete, and the balance four months from that date.

Within thirty days after the delivery of this equipment the purchaser was declared a bankrupt. Protests were made by the trustee in bankruptcy against the claim of the seller, on the ground that the president of the company was without authority to contract for this machinery.

In a judgment sustaining the right of the seller to a recovery the Federal appellate court said, "The primary question presented is whether the president of the corporation could by his act in buying the property create a lien upon the thing bought and the reality of the corporation. He was president of the corporation and had charge of its buying and selling and the purchase was made by him.

"The machinery was installed by the company and a part of the purchase price was paid by it in accordance with the terms of the contract. Whether or not the president primarily had authority to make the purchase, that which followed constituted a ratification."

Reeves v. York Engineering & Supply Co., 249 Fed. 513, Texas.

POSSESSION DENIED FINANCE COMPANY

IN the sale of a refrigerator to a hotel in Brooksville, Fla., it was stipulated in the contract that title to the equipment should remain in the seller until the purchase price was fully paid. After the contract had been assigned to a finance company suit was brought for possession of the equipment for failure of the hotel to make the payments as it had agreed.

The court in holding the finance company entitled to repossession of this machinery said, "Electrical refrigerators are somewhat in the nature of machinery yet have something of the quality of furniture. Although they are attached by wires and pipes to the building and may even be placed on specially constructed bases or foundations they usually are regarded by the trade as chattels.

"They are sold often upon installments and the parties agree that the nature and character of the article as personalty shall not change nor the ownership of it pass. We think that in the case presented the chattel did not become a fixture."

Commercial Finance Co. v. Brooksville Hotel Co., 123 So. 814, Florida.

FRAUDULENCY NOT FACT IN SALE OF PROPERTY

WHEN the seller of refrigeration equipment in North Carolina sued to recover \$1,500 agreed upon as the price in a purchase contract, it was set up as a defense that the sale was fraudulent and made by false



United Cork Molded Pipe Covering

FITS TIGHTER . . . GOES ON FASTER . . . PROVIDES MAXIMUM PROTECTION — When it comes to advantages, no other product can match *all* the benefits of United Cork's Molded Pipe Covering. Made from pure, clean, granulated cork, compressed and molded to exact size and shape and finished with a coating of plastic asphalt, it is an ideal covering for brine, ammonia, ice water, and cold lines of every kind. It has an extremely stable K factor over a wide low temperature range, will not rot or support combustion and is clean, sanitary and odor free. It is easy to install . . . and in the long run it's the least expensive.

Available in a wide variety of sizes and shapes from local stocks in key areas, coast to coast. Write today for more complete information as well as helpful installation data.



UNITED CORK COMPANIES

Since 1907

7 Central Avenue, Kearny, N. J.

Engineering offices or approved distributors in key cities — coast to coast.

Circle No. 44 on Reader Service Card

representations of the condition and capacity of the plant.

At the time of this sale the purchaser had been assured by the seller that if he would make some repairs the plant would function properly as it had in the past. However, this purchaser was a machinist and had been given free access to the premises and to the equipment by the seller for any examination he might wish to make. An award of judgment against the purchaser was sustained by the appellate court.

"To entitle a party to maintain an action for deceit by means of false representations," said the court, "he must show that the seller made false

and fraudulent assertions in regard to some fact or facts material to the transaction in which he was defrauded, by means of which he was induced to enter it.

"The misrepresentation must relate to alleged facts or to the condition of things as then existent. It is not every misrepresentation relating to the subject matter of a contract which will render it void or enable the aggrieved party to maintain his action for deceit. It must be as to matters of fact substantially affecting his interests, not as matters of opinion, judgment, probability, or expectation. The assertion respecting them is not an assertion as to an existent fact.

The opinion may be erroneous. The judgment may be unsound. The expected contingency may never arrive. The expectation may fail.

"An action for deceit in the sale of property does not lie for false and fraudulent representations concerning profits that may be made from it in the future."

Williamson v. Holt, 61 S.E. 384, North Carolina.

CONTRACT NOT WITNESSED OR ACKNOWLEDGED

CONTRACT for the installation of a refrigerating system in Connecticut was signed by the purchaser but was neither witnessed nor acknowledged. Under the statutes in that state the lack of witnesses or the absence of an acknowledgment to such an agreement makes the transaction an absolute sale as to creditors and bona fide purchasers.

When suit was brought by the assignee of the dealer to whom the contract had been transferred, to collect the unpaid balance the purchaser set up in his defense the absence of these features in the execution of the agreement, contending that the assignee had acquired no rights under the agreement.

Granting the dealer's assignee a judgment for the unpaid balance the court said, "The purchasers claim that the contract not having been witnessed and acknowledged as required by the General Statutes is unenforceable by the seller. The effect of these sections is not to render invalid as between the parties contracts of conditional sale which have been defectively executed but to render such contracts of conditional sale absolute as to creditors and bona fide purchasers."

"In the instant case no rights of creditors had intervened and the conditional seller could sell his interest in the property and the contract subject to the rights of the purchaser, which he did not disturb, the same as one could in like manner sell his interest in any other property."

Refrigeration Discount Corp. v. Chronis, 168 Atl. 783, Connecticut.



See Our Exhibit, Booth 307
AIR CONDITIONING
& REFRIGERATION
INDUSTRY
International Amphitheatre
CHICAGO
NOV. 18-21, 1957



19 TIMES AS EFFICIENT

Molecular sieves, the newest class of adsorbents, are the most efficient desiccants on the market . . . have the ability to adsorb at high temperatures up to 19 times more water.

- Eliminate acid corrosion
- No capacity loss due to oil adsorption
- Minimum of pressure drop
- Greater reserve capacity

SMALL IN SIZE . . . ONLY FIVE SIZES HANDLE 1/4 TO 10 TONS

A standard drier can be reduced to a fraction of its usual size with no loss in drying capacity because of greater efficiency of Molecular Sieves. Only five sizes are necessary to handle installations up to 10 tons. This means a minimum inventory and stock control.

ALL COPPER AND BRASS CONSTRUCTION WITH MONEL WIRE CLOTH FILTERS

REASONABLY PRICED PERFORMANCE RATED

KMP Moisture Magnets are tested and rated in accordance with ARI STANDARD 710

WRITE for full information. Inquiries welcomed.



Circle No. 45 on Reader Service Card

DRYER EXPANDS FAN DIV.

Dryer Electric Corp. has moved its fan division to a larger plant at 164-166 Wallabout St., Brooklyn 6, N. Y.

NAMED BETZ DIV. REP.

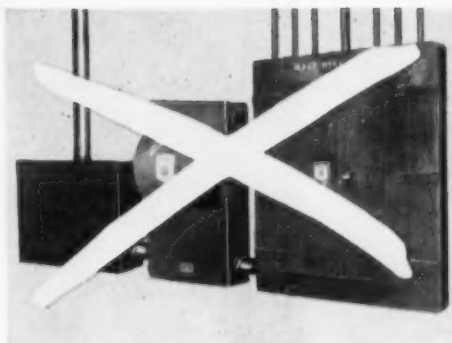
Northwest Factors of Seattle, Wash., and Portland, Ore., will be new representatives in the Pacific Northwest according to Blake Thomas, general manager of Betz Div. of Bohn Aluminum & Brass Corp.

THIS NEW **POWER-STYLE** SWITCHBOARD

TAKES LESS SPACE and COSTS LESS, TOO!



above • the modern way. C/T compartment and six distribution branches are combined in a single cubicle with all inter-connections bussed. Because installation time and costs are cut so drastically, this new way actually costs less than the old!



above • the old way of installing service entrance—a C/T cabinet, a large safety switch and a panel board or a gang of smaller safety switches were hung on a wall and connected by a complicated arrangement of wireway or conduit and cable. Expensive, space-consuming and unsightly.

POWER-STYLE FEATURES

- Only 14 inches deep and 30" or 36" wide... saves valuable space!
- Complete front accessibility—connect all circuits from the front!
- Standardized C/T compartment meets Edison Electric Institute and Public Utilities' specifications.
- Service sections are also available with a main switch or main breaker...arranged for either hot or cold sequence.

Write for Layout and Specification Manual...a valuable source of reference.
Address Square D Company,
6060 Rivard Street, Detroit 11, Michigan



NOW...EC&M PRODUCTS ARE A PART OF THE SQUARE D LINE

SQUARE D COMPANY

When you're a Trane

Trane supplies you run your



SO QUIET you hardly know it's there! These compact 3 through 15-ton de luxe models pack cooling comfort into a trim, slim modern package. And they're quiet! Exclusive TRANE "iso-sound" design has fan section and compressor section floating independently on sound and vibration isolators for the smoothest, quietest operation ever!

GO AFTER THE BIG ONES! These 10-15-20-ton commercial sizes may be installed outside the conditioned space for use with ductwork, if desired.

Circle No. 13 on Reader Service Card



Self-Contained Dealer...

the equipment... business as before

*Sell self-contained units from 3 to 20 tons...
plus the complete Trane line...with no
quotas, no minimums, no domination!*

Air conditioning contractors and dealers who have become TRANE Authorized Dealers have discovered that they have *complete business freedom*. They have no set sales quotas... no personnel requirements... no manufacturer domination. These dealers know that TRANE supplies them with the finest equipment—and they continue to run their business as before!

And the new TRANE Self-Contained units from 3 to 20 tons are the finest ever. Backed by these units—and the complete TRANE lines of equipment from 3 to 1500 tons—TRANE Authorized Dealers can go after *any* air conditioning job—any size, any type—and *make a profit*. And they're backed by a recognized leader in air conditioning equipment—supported by powerful national advertising and promotion programs.

Ask your nearby TRANE Sales Representative now about all the extra advantages you'll have as a

TRANE Authorized Source. Or write directly to TRANE, La Crosse, Wisconsin.

HERE'S WHY IT WILL PAY YOU TO TURN TO TRANE:

- **COMPLETE LINES!** Competitively-priced equipment for any air conditioning job is available to you as a TRANE Authorized Installer for packaged equipment.
- **A LEADER IN THE INDUSTRY!** TRANE is well known for outstanding air conditioning equipment... the famous TRANE CenTraVac, UniTrane units, compressors.
- **SERVICE HELP!** You'll have a trained serviceman *right in your own market*... not halfway across the country!
- **COMPLETE BUSINESS FREEDOM!** TRANE supplies the equipment, *you* run the business! No set sales quotas... no inventory minimums... no required amount of local advertising... no personnel requirements. You have complete freedom of action in buying and selling.
- **NATIONWIDE SALES FORCE!** A network of offices in 96 cities works with architects and engineers to help obtain favorable specifications and over-all company acceptance.



NATIONAL ADVERTISING in Newsweek, Business Week and other leading magazines helps pre-sell TRANE equipment for you.



COLORFUL LITERATURE, booklets, catalogues, posters and decals—plus signs for use at installation sites—help you sell!

For any air condition, turn to

TRANE

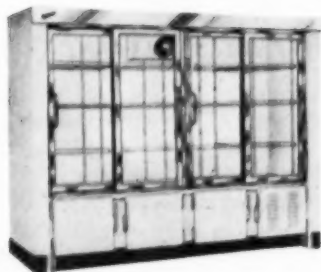
**MANUFACTURING ENGINEERS OF AIR CONDITIONING,
HEATING, VENTILATING AND HEAT TRANSFER EQUIPMENT**

GROW

GROW GROW

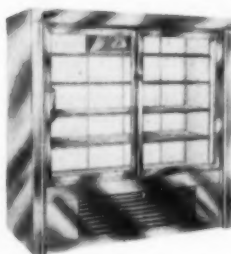


with the most complete
line of commercial refrigerators
in America today!



RB 98 SCH

Coldin dealers enjoy advantages that only the leader in the industry can offer . . . a name that is synonymous with quality manufacturing and a line so extensive in sizes and variety that every prospect is bound to become a sale. What does this mean to you? Plenty! It means that now you deal with one firm, one source for the equipment to serve Food Retailers, Hotels, Restaurants, Institutions, Schools, Clubs, etc. It means you don't lose sales because you can't supply the right size in the right cabinet at the right time. With a Coldin franchise you are assured that you can fill every order—promptly and profitably.



BB 73 SCSS

NEW Ideas NEW Designs NEW Features

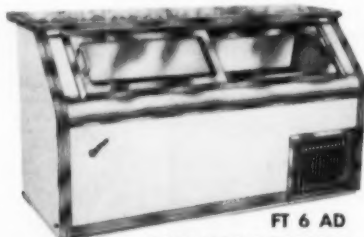
Our new 1958 line is the finest yet—we've added new cases and given the "new-look" to our big selling staples. All Coldin cabinets are loaded with extra features, many exclusively ours . . . and of course only the finest materials are used in our entire custom-built-type line.

The Coldin franchise is available to qualified organizations. Once our insignia is yours, you will be supported by an aggressive

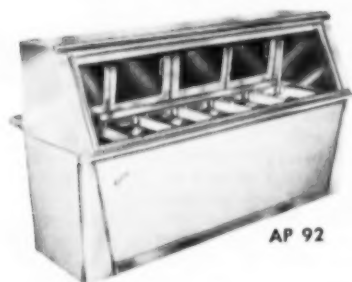
advertising and merchandising campaign to help pre-sell the market. Why not take advantage of this opportunity to grow and profit. We'd be happy to talk it over with you. Call or write for particulars today.



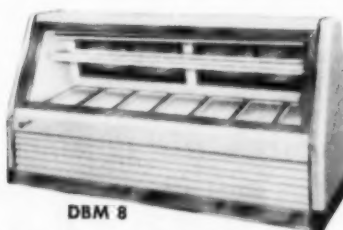
JM 8 U



FT 6 AD
AUTOMATIC DEFROST



AP 92



DBM 8

Send for our
New Catalog



COLDIN CABINET CO., INC.

2800 WEBSTER AVENUE • NEW YORK 58, N. Y. • CYPRESS 5-3311

See these new models in Booths 135 and 239

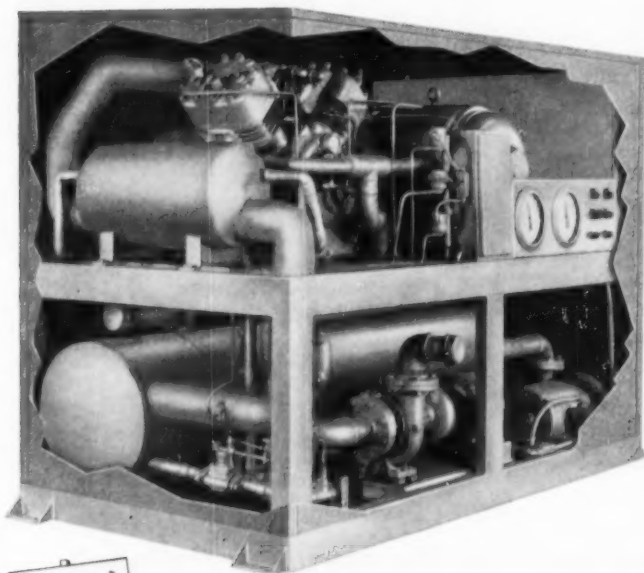
See Our Exhibit
10th EXPOSITION
AIR-CONDITIONING
& REFRIGERATION
INDUSTRY
INTERNATIONAL AMPHITHEATRE
CHICAGO
NOV. 18-21, 1957



BOOTHS
525-526

See OUTSTANDING B&G ADVANCES IN PACKAGE COOLERS AND REFRIGERATION COMPONENTS

B&G presents a complete line of air conditioning and refrigeration equipment, alive with new, exclusive features! New efficiencies have been designed into these products which materially reduce space requirements—improve operating economy—add to life of the equipment.



COMPLETELY SELF-CONTAINED PACKAGE LIQUID COOLERS— 7½ to 75 tons

Compare the *standard* equipment of the B&G Package Liquid Cooler with that of any other... see for yourself that you can have B&G quality at smaller installed cost. For example—

No inside wiring. All controls furnished—completely wired and interlocked.

No inside piping. All pumps are mounted, piped and electrically interlocked.

No framing. All equipment is mounted on permanent steel frame.

No metal forming. Heavy gauge steel jacket is sound-deadened, Hammerloid finished.

No insulating. Suction line and heat exchanger are fully insulated.

No testing. Fully tested under specified operating and varying load conditions.

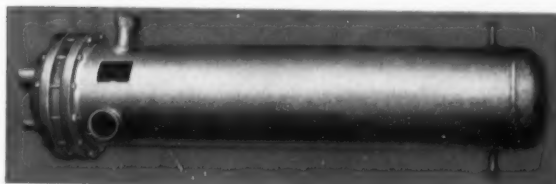
No extras. Furnished complete with gauges, compressor motor and flywheel, increment start, heat exchanger and full charge of Freon.



EVAPORATOR—50% smaller

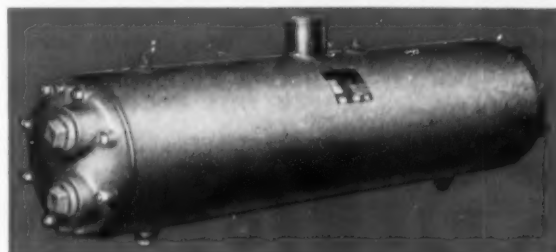
This Code stamped ASME Evaporator features tubing with specially designed interior metallic spline which almost triples inside heat transfer area... reduces unit size and Freon charge. Tube design permits U-bend construction without losing contact between spline and tube. B&G Evaporators are un-

conditionally guaranteed against tube damage from freeze-ups! Leak-proof, styrene insulation is molded directly on shell.



CONDENSER—2 to 200 tons

One-third smaller than previous models—less Freon needed. Exclusive design lowers pressure drop—raises operating efficiency. Tubes are rigidly supported in stacks with metal-to-metal contact between fins for free drainage of condensing Freon. Expensive sight glasses are eliminated by providing three liquid level openings. ASME Code stamped for Freon 12 and 22.



QUIET PUMPS

B&G 1522 Pumps are noted for quiet, leak-proof operation—ideal for cooling tower applications.



BELL & GOSSETT

C O M P A N Y

Dept. FA-45, Morton Grove, Illinois

Canadian Licensee: S. A. Armstrong Ltd., 1400 O'Connor Drive, Toronto 16, Ontario



Architects: Kahn and Jacobs, New York.

Permanent low "K" factor of four-year-old Styrofoam® installation proved at Mt. Sinai Hospital

After exhaustive investigation, Styrofoam—a Dow plastic foam—was chosen for insulation in twenty-three cold storage rooms at Mt. Sinai Hospital, New York City.

Four years of use at Mt. Sinai has proved that Styrofoam has a permanent low "K" factor and an outstanding ability to resist water and moisture. Its inherent cleanliness and its reduction of maintenance costs are other desirable factors

found by the hospital.

Let a Styrofoam distributor help you with your next insulation project. Many of them have better than a decade of Styrofoam experience backed by Dow research facilities and technical service. Contact the distributor nearest you, or write to THE DOW CHEMICAL COMPANY, Midland, Michigan—Plastics Sales Department PL-1701A-1.

CHECK THIS EXCLUSIVE COMBINATION OF PROPERTIES

STYROFOAM® FIRST IN PLASTIC FOAM INSULATION	Insulations	Low "K" factor	Superior water resistance	High compressive strength	Light weight	Superior resistance to rot and vermin	Easy handling and fabrication	Low-cost installation	Lowest cost per year service
	STYROFOAM	•	•	•	•	•	•	•	•
	A		•	•		•			
	B	•			•			•	
	C	•		•					

YOU CAN DEPEND ON

DOW

Circle No. 51 on Reader Service Card

NOVEMBER, 1957 • COMMERCIAL REFRIGERATION

GET IN TOUCH WITH YOUR STYROFOAM DISTRIBUTOR SOON

CALIFORNIA

Los Angeles 13: Pacific Foam Products Co.
San Francisco: Western Foam Products, Inc.

FLORIDA

Tampa: The Soule Co.

GEORGIA

Atlanta 8: Badham Sales Co.

ILLINOIS

Chicago 11: The Putnam Organization, Inc.

IOWA

Des Moines: Wilson-Rogers, Inc.

KANSAS

Kansas City: Styro Products, Inc.

MASSACHUSETTS

Ipswich: Atlantic Foam Products Co.

MICHIGAN

Detroit: Par-Foam, Inc.
Midland: Floral Foam Products

MINNESOTA

Minneapolis 8: Edward Sales Corp.

MONTANA

Billings: Madden Construction Supply Co.

NEW YORK

Rochester 20: William Summerhays Sons Corp.
Long Island City 1: Styro Sales Co., Inc.

OHIO

Cincinnati: The Seward Sales Corp.
Cleveland 3: Structural Foams, Inc.

PENNSYLVANIA

Plymouth Meeting: G & W H Corson, Inc.

TEXAS

Houston: The Emerson Co.

UTAH

Salt Lake City 10: Utah Lumber Co.

WASHINGTON

Seattle 9: Wiley-Boyley, Inc.

WISCONSIN

Milwaukee: S & S Sales Corp.

CANADA

Edmonton, Alberta: Northern Asbestos & Bldg. Supply Co., Ltd.
Kitchener, Ontario: Durafoam Insulation, Ltd.
Vancouver, B. C.: Wiley-Boyley Dist., Ltd.

THE DOW CHEMICAL COMPANY
Midland, Michigan



November 14-16, 1957

American Society of Refrigerating Engineers (Semi-Annual Meeting)
Shoreland Hotel
Chicago, Ill.

November 16-18, 1957

Air-Conditioning and Refrigeration Wholesalers (Annual Meeting)
Morrison Hotel
Chicago, Ill.

November 16-18, 1957

Refrigeration and Air Conditioning Contractors Association (Annual Convention)
Drake Hotel
Chicago, Ill.

November 16-19, 1957

Refrigeration Service Engineers Society (Annual Convention)
Morrison Hotel
Chicago, Ill.

November 17-20, 1957

National Heating & Air Conditioning Wholesalers
Morrison Hotel
Chicago, Ill.

November 18-19, 1957

National Commercial Refrigerator Sales Association (Annual Convention)
LaSalle Hotel
Chicago, Ill.

November 18-21, 1957

10th Exposition of Air Conditioning & Refrigeration Industry
International Amphitheater
Chicago, Ill.

November 18-21

National Association of Practical Refrigerating Engineers
Del Prado Hotel
Chicago, Ill.

November 18-22, 1957

National Warm Air Heating and Air Conditioning Assn. (Committee Meetings and Annual Convention)
Hotel Morrison
Chicago, Ill.

January 27-29, 1958

American Society of Heating and Air Conditioning Engineers (Annual Meeting)
Pittsburgh, Pa.

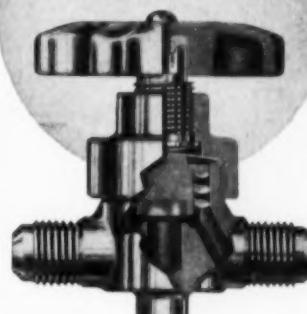
May 4-7, 1958

Air-Conditioning and Refrigeration Institute (Board Meeting and Annual Meeting)
The Homestead
Hot Springs, Va.

here's
the
inside
story
on
the



KEROTEST
NO. R224
DIAPHRAGM PACKLESS
LINE VALVE



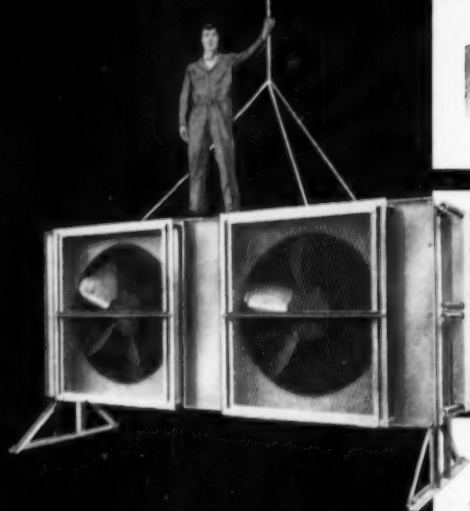
FOR ALL TYPES OF
REFRIGERATION AND
AIR-CONDITIONING SYSTEMS

The inside story as you can see above is built-in quality and sturdy construction. Outstanding for high vacuum service, liquified petroleum gases, gasoline, instrument control panels, oxygen (degassed), compressed air, water, nitrogen and refrigeration boards. Full flow, forged brass body, beryllium copper and stainless steel diaphragms are a few of many features. Available in sizes 1/4" through 3/4" flare and solder sizes. See your Kerotest wholesaler.

Ask for Model No. R224



KEROTEST MANUFACTURING CO.
2504 Liberty Avenue • Pittsburgh 22, Pa.
Circle No. 53 on Reader Service Card



KRAMER PRODUCTS

Have earned an unsurpassed reputation for leadership and dependability that makes it easy for wholesalers and contractors to grow and prosper.

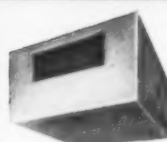
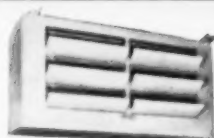
Designed and engineered to the highest standards, users of KRAMER products stay sold. Pictured are a few of the many KRAMER products—each a standard of the industry.

WEDGE UNIT
4 models
1,000 to 6,000
BTU'S Per Hour



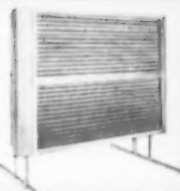
CUB CURVETTE
3 models
800 to 4,000
BTU'S Per Hour

COOLMASTER
14 models
2,500 to 160,000
BTU'S Per Hour



AIR CONDITIONING
UNIT
3 to 10 Ton

UNICON for Unlimited
Tonnage; any size compressor can use this remote air-cooled condenser. Minimum head pressure maintained by patented Winterstat.



COIL AND BAFFLES
15 Stock Sizes

THERMOBANK automatic re-evaporator hot gas defrost systems. There is a THERMOBANK for every application from 36° to minus 75°.



LARGE CURVETTE
7 models
3,500 to 30,000
BTU'S Per Hour

KRAMER TRENTON CO. • Trenton 5, N.J.
44 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

SPORLAN

proudly **ITT** *presents*

A NEW PEAK PERFORMER

at the **10th** EXPOSITION

AIR-CONDITIONING and REFRIGERATION INDUSTRY

Booth Nos.
323-325

ITT

will add
another link in this ever growing
chain of Peak Performers

THERMOSTATIC EXPANSION VALVES

*with Flow-Master Elements
and Selective Charges*

SOLENOID VALVES

SOLENOID PILOT CONTROL

with Blue Seal Coils

CATCH-ALL FILTER-DRIERS

with the Famous Molded Porous Core

**REFRIGERANT
DISTRIBUTORS**

**LMC
LIQUID LEVEL
CONTROL**

STRAINERS



INTERNATIONAL AMPHITHEATRE... CHICAGO, ILLINOIS



NOVEMBER 18-21, 1957

SPORLAN VALVE COMPANY

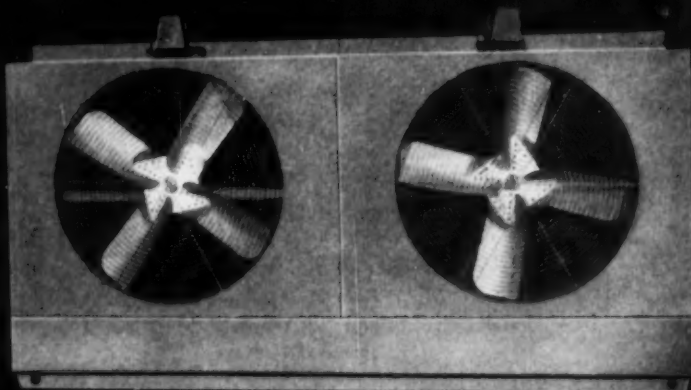
7525 SUSSEX AVENUE ST. LOUIS 17, MISSOURI

EXPORT DEPT. AD. AURIEMA, 85 BROAD STREET, NEW YORK 4, N. Y.

Circle No. 55 on Reader Service Card

HALSTEAD & MITCHELL ENGINEERS PROVE . . .

A 100-TON COOLING TOWER CAN BE QUIET



HERE ARE TWO, NEW LARGE SIZES ADDED TO HALSTEAD & MITCHELL'S COMPETITIVELY-PRICED EC COOLING TOWER LINE

THE EC LINE. The addition of the 80- and 100-ton capacity towers extends the range of the more-value-per-dollar EC line. All 12 models, 5 to 100 tons, have outstanding features never before offered in this price group.

These include increased corrosion resistance due to rugged, 14-gage steel cabinets (12-gage sumps on the largest sizes) —weatherized by application of Vinsynite, Vinyl Zinc, and Chlorinated Rubber coatings. Exclusively, H&M offers pressure-croosoted wetted deck surfaces with the industry's only 20-Year Guarantee against rotting or damage due to fungus attack. New, sealed fan bearings are lubricated for life. Gravity-type distributing pans reduce pumping head, and cut down windage losses. Sump water levels are automatically controlled by integral float valves.

QUIET. Large diameter, four-bladed, deep pitch fans are belt-driven at low speeds by special weather and splash-proof motors. The EC-80 and EC-100 are driven at speeds of only 400 and 450 RPM. They're really quiet! Twin fans and drives power the three largest sizes, and all fans are of zinc plated, chromate dipped mild steel.

EC Series Cooling Towers are available in capacities of 5 thru 100 tons in standard, factory assembled models, or as Take-Aparts (ECK Series) for difficult-to-get-at installations. Residential, direct-drive ECD Series, with all the custom features and also competitively priced, come in capacities of 2 thru 7½ tons. Call your nearest Halstead & Mitchell wholesaler for delivery and prices or write: *Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.*

WRITE FOR COMPLETE DETAILS



Circle No. 56 on Reader Service Card

NOVEMBER, 1957 • COMMERCIAL REFRIGERATION



DIAL "SPRINGTIME" ANY TIME

with Chrysler's **AIRTEMP**

VISIT THE **Airtemp** EXHIBIT AT THE
10TH EXPOSITION . . .
AIR CONDITIONING INDUSTRY
Booths **105-110** — International Amphitheatre
Chicago • November 18-21, 1957

NEW AIRTEMP
room
air conditioners

NEW AIRTEMP
air-cooled
air conditioners
up to 30 ton capacity

NEW AIRTEMP
years-ahead
gas furnaces

NEW AIRTEMP
commercial and
industrial
air conditioners



DAYTON 1, OHIO

AIR CONDITIONING AND HEATING FOR A ROOM,
A HOME, A BUSINESS, AN AUTOMOBILE

Circle No. 57 on Reader Service Card

NOW...USE ONLY ONE WATER VALVE

FOR BOTH R-12 and R-22



New Penn 246 ALL-RANGE Water Valve

Here is the refrigeration industry's *favorite* water valve . . . the Penn 246 . . . in a new ALL-RANGE model making it suitable for *both* R-12 and R-22 service! Your inventory is reduced yet you'll always have the right model on hand.

And remember, you get the same dependable features that have made Penn 246 water valves stay on the job longer . . . no valve chatter; no water hammer; no corrosion of sliding parts because water never touches them; easy manual flushing; highly sensitive yet accurate. Available in $\frac{3}{8}$ ", $\frac{1}{2}$ " and $\frac{3}{4}$ " sizes.

Don't settle for something "almost as good" . . . specify Penn ALL-RANGE water valves.

Ask your wholesaler or write Penn Controls, Inc.

PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N. Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

Circle No. 58 on Reader Service Card

NOVEMBER, 1957 • COMMERCIAL REFRIGERATION

Let's Talk Business!

How Do You Look to Your Customers?

SELDOM do you have the opportunity to see yourself and your business through the eyes of a prospective customer. Few prospects, if any, will take the time to tell you their reaction to you as a person and to your organization.

Yet, whose opinion and reaction is more important than that of this group of people who can and will buy from you . . . if you give them half a chance?

Just think about it a minute. Do you do all the things that are necessary to be sure that your best business foot is forward when you are exposed to a prospective customer? Do you conscientiously attempt to make this person want to buy *your* product from *you*? I'm sure that many of you do.

Whether you do or whether you don't, however, we of COMMERCIAL REFRIGERATION & AIR CONDITIONING feel sure that you can benefit by learning of the experiences of a typical "prospect" as he calls on a number of dealers to obtain their proposals for providing year-round air conditioning in his home. His first-person report of his efforts is presented in the story on the following pages—"What Happened When I TRIED To Buy Year-Round Air Conditioning".

There may be some people who feel that this merchandising experiment was vindictive and resulted in nothing more than a waste of these dealers' time. But after you have read this article, you may find that there is some room for improvement in your own selling efforts, and that this factual report has helped you spot certain weaknesses you can correct.

If this is the result, then certainly no one can rightly feel that it was wasted effort.

... see you at the Show!

The editors of COMMERCIAL REFRIGERATION & AIR CONDITIONING join this writer in urging you to attend the 10th Exposition of the Air Conditioning & Refrigeration Industry in Chicago, November 18 through November 21. There you will have the opportunity of seeing almost all of the industry's products on display. You also will have a chance to meet the manufacturers' people who depend upon you to help guide them towards better products and better sales policies.

While there, please stop by our booth — No. 670 — and say hello.

Good luck and good selling.

Thom Muir

EDITOR'S NOTE: *Thom Muir invites you to write to him regarding any sales problem that you might wish him to discuss. Address your letters to him in care of this magazine.*



FOR DEPENDABLE REFRIGERATION

ENGINEERED TO INSURE MAXIMUM EFFICIENCY



Cold-Cel
TRUCK PLATES



Truk-Cel
EUTECTIC BLOWER UNITS



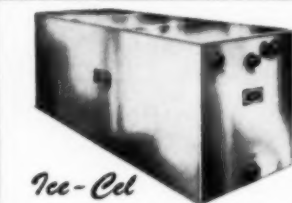
Air-Cel
CIRCULATING UNIT



Freeze-Cel



Heat-Cel
AUTOMATIC DEFROST



Ice-Cel

LATENT HEAT STORAGE FOR AIR CONDITIONING

CHURCHES • LODGE HALLS • MORTUARIES
THEATERS • OFFICES • CAFETERIAS

Write for Engineering Catalog BAE

ACCUMULATORS FOR SWEET WATER COOLING

Write for Engineering Catalog BPE

Cold-Cel TRUCK PLATES . . . Engineered to maintain any temperature required throughout the trip . . . Write for Engineering Catalog CE.

Truk-Cel EUTECTIC BLOWER UNITS . . . For all high temperature applications "Holdover for stopovers" . . . Write for Engineering Catalog CBE.

Air-Cel CIRCULATING UNIT . . . Insures even distribution of refrigeration when used with truck plates . . . Write for Engineering Catalog GE.

Freeze-Cel . . . Double contact plate freezer for quick freezing packaged foods. Write for Engineering Catalog FE.

QUICK-FREEZE STAND . . . For faster freezing to insure quality and flavor control . . . Write for Engineering Catalog AE.

Heat-Cel LOW TEMPERATURE DEFROST SYSTEM

Designed by Specialists in the Low Temperature Field!

Heat-Cel AUTOMATIC DEFROST . . . Heat for re-evaporation supplied by low wattage electric element . . . Write for Engineering Catalog DBE.

Unit-Cooler . . . Designed for maximum efficiency at low temperature . . . Write for Engineering Catalog DBE.

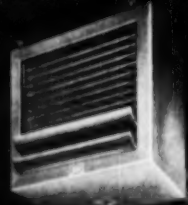
ABOVE UNITS AVAILABLE SEPARATELY

OVERHEAD BANK . . . Featuring natural convection with minimum dehydration loss . . . Write for Engineering Catalog AE.

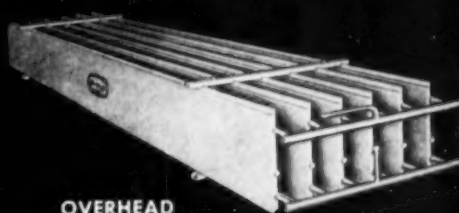
Let Dole engineers help you with your refrigeration problems. No charge or obligation.

DOLE REFRIGERATING COMPANY

5942 N. PULASKI ROAD, CHICAGO 30, ILL. • 103 PARK AVENUE, NEW YORK 17, N. Y.
In Canada: Dole Refrigerating Products Limited • 44 Elgin Street, Brantford, Ontario



Unit-Cooler



OVERHEAD
BANK

Circle No. 59 on Reader Service Card



YOU THINK IT'S TOUGH to sell year-round residential air conditioning? You ought to try to buy it!

I did. In fact, I tried seven times. And I found out just how confused and frustrated a potential customer can get when not even one dealer tries to do a really complete and constructive selling job on him.

Turn the page for the full story of what happened when . . .

I tried to buy YEAR-ROUND AIR CONDITIONING for a new home

. . . a factual, first-person report
of a revealing merchandising experiment conducted by
COMMERCIAL REFRIGERATION & AIR CONDITIONING





YOU THINK IT'S TOUGH to sell year-round air conditioning? You ought to try to buy it! I did. In fact, I tried seven times. And I found out just how confused and frustrated a potential customer can get when not even one dealer tries to do a really complete and constructive selling job on him.

I Tried to Buy

HERE'S THE FULL STORY OF WHAT HAPPENED . . .

My assignment was to try to find out how effectively year-round home air conditioning is being merchandised by dealers today. To accomplish this I posed as a young family man with above-average income who was definitely interested in contracting for the installation of complete heating and cooling in a new house I was about to have built for me.

Armed with a complete set of plans for this mythical house, and a credible tailor-made story of my personal situation, I walked into seven of the top residential air conditioning dealerships in one of the country's major metropolitan areas.

Each of the dealers contacted identified himself with a nationally known line of equipment in the classified section of the telephone book. Prior investigation had revealed that each one maintained some sort of showroom, as well as full installation and service facilities.

Plans for the house were obtained from a local architect. Seven copies of the plans were made so that I could leave one full set with each dealer to aid him in preparing his proposal. In each case I made a second appointment with the dealer two days later to pick up the plans and his job estimate.

The house described in the plans was of standard, single level, "ranch type" construction, with full basement, and containing approximately 1559 sq.ft. of living area. Fully insulated and with double-pane glass throughout, it was to be oriented facing north.

Ground floor plan included living room, dining room, kitchen, dinette, two bedrooms, bath, and den or activity room, as well as attached two-car garage. The

garage was not to be heated. Basement included recreation room and laundry room, as well as a workroom or hobby area and space for all utilities.

Personal background to be provided any dealer who might inquire included the fact that I was an insurance salesman with an income of about \$10,000 per year, a pregnant wife, and a mother-in-law who would be living with us in the new house.

My story was that while the plans had been prepared for me by an architect, I had not yet definitely decided on a builder. In any event, however, I planned to contract for the heating and cooling installation myself. To parry questions on house location, I was prepared to tell each dealer that I was negotiating for one of two lots, both of which were located in the same general area of the city as his establishment.

I took particular pains in each of these contacts to say or do nothing that would in any way indicate that I was anything but what I pretended to be—a bona fide prospect, already sold on the merits of air conditioning, determined to have it in my new home, ready and eager to buy, and seeking only the necessary information that would help me decide who was going to do the job and with what equipment.

To pave the way for a competitive sales pitch, I made it clear to each dealer that while I was interested in learning what his line of equipment offered, I also was going to investigate and get estimates on two other specifically named brands as a basis for comparison before signing any order.

After thus clearly establishing myself as a "sitting

Year-Round Air Conditioning

by Richard W. Bracker, Associate Editor

duck", and being fully aware that the air conditioning industry as a whole is "hurting" this year from a lack of anticipated sales volume, I confidently expected most—if not all—of these dealers to make an all-out bid for my business. I simply assumed that they would greet me with open arms and do everything but lock

me in their office until I signed the order.

Nothing could have been further from reality. Actually, the results of these calls were shocking and disillusioning. Every single one of these seven dealers, in one respect or another, evidenced a distressing lack of the very fundamentals of good salesmanship.

HERE ARE THE GLARING SALES WEAKNESSES REVEALED . . .

In the great majority of cases my only contact was with either an office girl or a shop worker, and the results of such contacts were generally unsatisfactory because these individuals were not in a position to do an adequate selling job.

Four out of the seven dealers contacted didn't even take the trouble to spell my name right or get my address or phone number correct.

Only two dealers took the time to study the house plans, and only three requested any further details concerning the proposed job.

Not a single one made any effort to qualify me as a prospect by probing into my personal background.

Only two out of seven dealers made any attempt to give me any kind of a product story.

Four dealers did make some casual reference to the fact that their firm would "do a good job" for me. Only one of these made any mention of service facilities. Only one referred to any satisfied customers—and that was a commercial installation.

One bright spot in this dismal picture was that all but one of the dealers did manage to have the proposal ready for me at the time agreed upon.

Only one dealer out of the seven made any attempt to explain the proposal to me by telling me why a certain size or type of equipment had been specified, or by elaborating on any other phase of the installation.

Grim picture, isn't it? But here's the most damning indictment of all:

NOT ONE SINGLE DEALER ever asked for the order!

AND NOT ONE made any attempt to follow up on this \$2500-\$3000 piece of potential business by telephone, by letter, or by personal contact!

*For a call-by-call analysis of
these seven dealers, turn the page*

Continued from preceding page



First Call: A very pleasant fellow greeted me and offered me a cup of fresh coffee. After I told him the particular brand of equipment in which I was interested, he introduced me to that manufacturer's local representative, who apparently had stopped only minutes earlier. I thought that this would be the beginning of a real juicy sales pitch. I was wrong. The representative just shook hands with me and resumed his work at the desk where he had been sitting.

The dealer then put our conversation on a first-name basis; this made me feel right at home. He suggested that I consider standard galvanized equipment for the roof and chimney. I was told that 98% of his customers ordered it and that the price was the most reasonable.

I asked what this part of the installation had to do with the heating and cooling end. He said that his firm also did sheet metal work. "On new homes, we usually figure that part of the work along with the heating or cooling," he said. That seemed logical to me.

He asked where the home was going to be built. I gave him the "canned" answer. He requested no further information. He seemed glad to get the information that the home was to be fully insulated and that it would face the north. He thanked me when I left.

Second Call: I called the dealer by his first name when I returned two days later. He had not only forgotten my name, but my face as well. He asked me "What's new?" and "How are things going for you?" I could see he didn't know who I was or why I was there. I finally told him I had come to pick up my plans and the quotation.

He told me everything was all ready. He apologized for forgetting me and admitted that he had mistaken me for a salesman. He said that he just couldn't place my face.

We went down to his stockroom, where he showed me some models of baseboard diffusers and explained their operation. He gave me a brochure on these diffusers; his discount was written on it in pencil.

He mentioned several other pieces of literature that he was going to give me, but when he went to his file cabinet he discovered his supply was gone. He chided an office girl for not having ordered more.

HERE'S HOW THE SALES EFFORTS OF THE SEVEN

FIRST CALL

DEALER	WHO MADE INITIAL CONTACT?	WAS NAME ETC. TAKEN CORRECTLY?	WERE PLANS STUDIED?	WAS PERSONAL BACKGROUND PROBED?	WERE JOB DETAILS REQUESTED?	WAS PRODUCT STORY TOLD?	WERE DEALER'S REPUTATION AND FACILITIES PROMOTED?
A	OWNER	NO	NO	NO	NO	YES	YES
B	OFFICE GIRL	NO	NO	NO	YES	NO	YES
C	OFFICE GIRL	YES	NO	NO	NO	NO	NO
D	SHOP WORKER	NO	YES	NO	YES	YES	YES
E	SHOP WORKER MANAGER	YES	NO	NO	NO	NO	NO
F	OFFICE GIRL	YES	YES	NO	YES	NO	YES
G	OFFICE GIRL	NO	NO	NO	NO	NO	NO

He then brought out a catalog and leafed through it, pointing out various features of the product line in which I was interested. He said he thought that line was the best.

"We are very proud of our work," he said. He told me about one of his commercial jobs in the community, and suggested that I stop in and see it on my way home. "We still have a lot to learn about installations, but when we make a mistake we correct it immediately," he said.

He offered me a cup of coffee, as he did on my first call. I had told him the first time that I didn't drink coffee. He then gave me his card and a ball point pen with his firm's name on it. He thanked me for stopping in. The proposal was typed on a contract form in duplicate with the dealer's business card attached. My name was misspelled.



First Call: A very business-like woman (apparently the office girl or bookkeeper) took down the information on a card and attached it to the plans. She asked me if I wanted both heating and cooling; only seconds before I had told her I did. She wanted to know if the garage was to be heated. She neither opened up the plans nor thanked me for bringing them in.

Second Call: The same woman greeted me and then hurriedly read over the quotation to me. She became a little edgy when I asked her to repeat one part of it.

A man, later identified as the shop foreman, came over to where we were standing; the woman walked away. He asked me if I had any further questions. I told him I didn't. He then began to talk about non-union and union policies, and advised me to have only union men work on my home.

"Now, we would do a good job for you," he said. He was pleasant enough, but didn't thank me for stopping.

The estimate was typed on a contract form with a specification sheet stapled to it. My last name was misspelled again.

*For more case histories of
dealer calls, turn the page*

DEALERS STACKED UP. EVERY "NO" IS TROUBLE SPOT!

SECOND CALL

DEALER	WHO MADE INITIAL CONTACT?	WAS PROPOSAL READY?	WHAT WAS FORM OF PROPOSAL?	WAS PRODUCT LITERATURE INCLUDED?	WAS ATTEMPT MADE TO EXPLAIN PROPOSAL?	WAS ORDER ASKED FOR?	WAS FOLLOW-UP MADE?
A	OWNER	YES	CONTRACT FORM IN DUPLICATE	FURNACE ONLY REGISTERS	NO	NO	NO
B	OFFICE GIRL SHOP FOREMAN	YES	CONTRACT FORM	FURNACE ONLY	NO	NO	NO
C	OFFICE GIRL	YES	LETTERHEAD IN DUPLICATE	NO	NO	NO	NO
D	OFFICE GIRL ESTIMATOR	YES	WRITTEN ON BACK OF RECEIVING SLIP	NO	YES	NO	NO
E	OFFICE GIRL	YES	LETTERHEAD IN DUPLICATE	NO	NO	NO	NO
F	OFFICE WORKER	YES	LETTERHEAD IN DUPLICATE	NO	NO	NO	NO
G	OFFICE GIRL ESTIMATOR	NO	LETTERHEAD IN DUPLICATE	NO	NO	NO	NO

Continued from preceding page



First Call: A young woman (the only employee around) seemed very anxious to dispose of me. She took my name and address in a great big hurry. I was the only customer in the place.

I told her about the home facing north and that it was to be fully insulated, but she said this information was not needed in figuring the plans. I wondered about that, but I didn't insist. She told me the quotation would be ready in two days, and I left.

Second Call: I was greeted by the same woman. She remembered my name and handed me the plans with the quotation typed in duplicate as a letter on the firm's letterhead. It was in an envelope which also contained a business reply envelope.

She didn't say anything else, so I went on my way. I received no product literature, and nobody tried to "sell" me on the advantages of the brand this company represented.



First Call: The front door was locked, but I thought someone might be in the building because I could hear a dog barking inside. I went around to the back and found a shop worker there, going over some plans.

He went over my plans very carefully. He asked me where my home was to be built, and went into an explanation about permit costs for jobs, which he said were different in city and in suburbs.

He asked if I wanted two registers in the bedrooms. He said one would be enough, but advised two for more complete comfort. He reasoned that the job was going to be done only once, and that I should consider the benefits with two.

He took me by surprise when he said that I would

have to decide the location of the baseboard diffusers. I asked him where he thought they should go. He recommended that they be placed under windows and then have the drapes a few inches above the registers so the units would not be blocked.

"Do you want the garage heated?" he asked. When he asked me if I knew all about the brand in question I told him that I didn't and was interested in getting more information. I thought that he was going to give me some literature or some facts, but he didn't.

He then pointed to a year-round system in the shop, and said that that line (the brand I had requested) was "the best on the market". "I hope you pick up the plans on a warm day, so you can see how this unit cools the shop," he said.

Just then the telephone rang. He talked for nearly 15 minutes, but didn't apologize for the interruption. He just said, "Well OK then, we'll have the plans ready."

Second Call: The office was open this time, and a woman welcomed me. She didn't have the estimate typed, but read it to me. I'm glad she did, because the estimate was written in longhand on the back of another company's yellow receiving slip and was not very legible. She didn't go into any explanation; she just read what was on the paper.

I started to leave when a man, who identified himself as the one who had figured the plans, came over and said that "Brand X (his line) is the Cadillac of the industry." He referred to some literature on the desk and compared Brand X with another line. He said that his line was definitely better.

The woman then tossed in the comment that the job could be figured much cheaper if I selected another line, which this company also handled. I gave her no reason for saying that.

The man then asked her why she hadn't at least written the estimate on their firm's letterhead. The woman seemed to become very embarrassed, and said that she disliked typing "first" estimates. "Builders are always changing their minds, and I usually have to re-do them," she said.

The estimator pointed out that the home actually could take a five-ton unit, but that three tons would do the job. He discussed at great length the temperature differences between the inside of a home and the outside. He cautioned that the difference normally shouldn't exceed 12 degrees. He didn't thank me when I left, but he did give me his card.



HOW PRICES AND MECHANICAL DETAILS OF PROPOSALS VARIED

DEALER	FURNACE SIZE	AIR CONDITIONER SIZE AND TYPE	NUMBER OF SUPPLIES ON GROUND FLOOR	NUMBER OF RETURNS	NUMBER OF SUPPLIES IN BASEMENT	LOCATION OF OUTLETS	QUOTED PRICE	GUARANTEEN ON DESIGN CONDITIONS	GUARANTEEN ON EQUIPMENT
A	150,000 BTU	3 HP AIR COOLED	15	6	NOT INDICATED	OUTSIDE WALL	\$2520	NONE INDICATED	NONE INDICATED
B	125,000 BTU	3 TON AIR COOLED	14	5	5	NOT INDICATED	\$2492	NONE INDICATED	NONE INDICATED
C	150,000 BTU	5 TON NOT INDICATED	14	5	4	SIDE WALL	\$2505	NONE INDICATED	NONE INDICATED
D	150,000 BTU	3 TON WATER COOLED WITH TOWER	15	5	5	NOT INDICATED	\$2700	NONE INDICATED	NONE INDICATED
E	140,000 BTU	5 TON AIR COOLED	15	6	3	NOT INDICATED	\$3145	NONE INDICATED	NONE INDICATED
F	150,000 BTU	5 HP AIR COOLED	13	5	2	NOT INDICATED	\$2910	NONE INDICATED	NONE INDICATED
G	MODEL NO. ONLY	MODEL NO. ONLY	NOT INDICATED	NOT INDICATED	NOT INDICATED	NOT INDICATED	\$2700*	NONE INDICATED	5 YEAR

*Only proposal that did not include exterior sheet metal work

First Call: A shop worker referred me to the manager, who was extremely courteous. He made a note of all the information I gave him. This fellow recommended copper flashing for the roof valley and chimney areas, even though it was more expensive. "I'd recommend it even though we might not get the job," he told me. "It's worth it for only a few pennies more."

We then walked into the back of the shop where he showed me some pieces of copper and told me to feel them. He seemed to put such great faith in copper that I told him to go ahead and figure it in the estimate.

He made no comment about any other phase of the job, but told me I could have the plans the next day, if I wished. He introduced himself as I was leaving, and apologized for not having done so earlier. He attempted to qualify his neglect by saying that he had just returned from his vacation and had not fully adjusted to being back.

Second Call: There was no one in the shop, so I went into the office, where a very pleasant woman greeted me. After I told her I had come to pick up the plans, she addressed me with my correct name. She said that she had sent the estimate to my home in the previous night's mail. She then handed me the plans and said that they were very grateful for the opportunity to serve me.

The estimate was on the company's letterhead, and was typed in duplicate.



First Call: An older woman greeted me. She was quick to make it clear that *she* could not figure the plans, but offered to help me in any way that she could.

She asked if the garage was to be heated. She asked me where the home was going to be located. She then pointed out cost differences in various permits, and gave me some explanation of sub-contracting policies.

She suggested that I make a second choice of brands, in case my particular product choice could not be adapted to my home. She said that sometimes one line turned out to be less suitable for certain homes. This information was very interesting to me and I cooperated by giving her an alternate brand name.

She explained very carefully the firm's one-year service policy. She offered to call me if the plans could not be figured at the designated time.

Continued on next page

Continued from preceding page

Second Call: A man at a desk handed me the plans and estimate. He smiled, but didn't speak. I didn't say anything either, and left.

The quotation was a typed letter in duplicate in the firm's envelope.



First Call: A secretary told me that the estimator was not in, but she politely recorded all of the information about the home. She smiled and assured me the plans would be figured when I returned.

Second Call: The estimator was taking a coffee break, and the same girl said that he would be back in five minutes. After 10 minutes she called a restaurant down the street and he then returned in a few minutes.

He shook my hand but did not give his name. He began to fire questions at me. Would I want water or air

cooled unit? Perimeter or extended plenum system? Where should the condensing unit be located? Would I want a ventilator fan in the attic? I tried to be tactful when I replied, "You tell me!" He just smiled.

He didn't ask, but told me I should have the garage heated. He said it would only be a matter of \$10 or so more in the estimate.

We went into another office where he produced an onion-skin drawing of the plans. He gave my plans to me and said he had made the onion-skin reproduction for further use.

The plans were not figured. "As sure as shootin' I would have figured the plans wrong," he said. He was referring to various uncertainties revealed earlier in his series of questions.

I told him to figure the plans the best way he knew how and I said that I was certain his judgment on these matters was better than mine. He then told me he would have the plans ready in a couple of more days. He mentioned nothing about any inconvenience to me.

Third Call: I telephoned, and the secretary said that the estimator was out but that she was certain the estimate was ready.

When I arrived, the girl took one look at me and started looking for the estimate. She apologized to me when she couldn't locate it. The estimator then came into the showroom and told me the figures weren't complete, but offered to mail them to me. I accepted the offer.

The figures did arrive by mail—three weeks later. They were contained in a letter in duplicate. My name was misspelled.

AN INVITATION TO THE INDUSTRY EXPOSITION . . .

by Lud Emde, president, Air-Conditioning & Refrigeration Institute

IF you can imagine \$5,000,000 worth of displays, 7,500 different products, over 2,000 experts on hand to answer your questions, and 20,000 old friends as visitors, you'll get some idea of what's waiting for you in Chicago at the 10th Exposition of the Air Conditioning & Refrigeration Industry.

Where else can you get so much valuable business information so quickly?

This 10th Show is like nothing that has ever been produced before. It will be so big and so wonderful that, unless you plan your visit in advance, you'll miss a lot of information and some of the fun.

May I offer a few tips:

1. Bring your associates and the up-and-coming members of your staff. Talk things over right on the spot and if there are any unanswered questions, you can get them while the Show is still on.

2. Plan your visit. There will be so many people and things you want to see, there just won't be time

unless you allot your time carefully. Make appointments ahead of time. Make notes of exhibits you have a special interest in.

3. Don't expect to see it all in one day. This Show is really too big for that. Frankly, I don't think you'll be able to see everything and speak to all the people you want to, even if you spend four days there. Remember, there will be 7,500 items on display.

4. Plan to attend the conference sessions of your association. You've got a lot to offer to, and learn from, your friends and associates. The ideas you get are like money in the bank.

5. Bring your wife. She's entitled to a little vacation, and she's really interested in your business. She'll enjoy a look at the Show.

I'll be looking forward to seeing you in Chicago. And I want you to tell me then whether or not you agree with my predictions.

NOW ... winter-controlled operation with the **BOHN** Air-Cooled Condenser and built-in *Sensitizer*

Reduces Cost • Simplifies Installation

ALL BOHN Air-Cooled Condensers in the ACS series feature the new all-season Sensitizer which adjusts automatically to seasonal weather changes. Maintains proper head pressure when outside air temperature drops. Eliminates hand valves and check valves...simplifies piping. Designed especially for applications where water is expensive or not in sufficient supply. For low first cost, low operating and maintenance cost, the answer is a BOHN Air-Cooled Condenser.

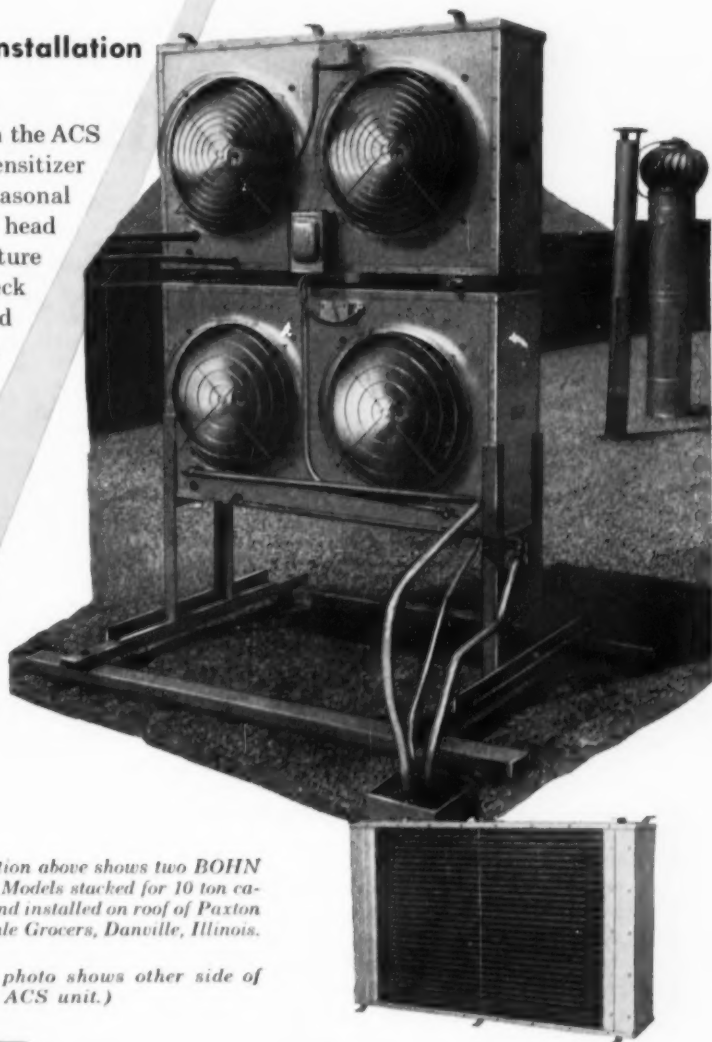


Illustration above shows two BOHN ACS-60 Models stacked for 10 ton capacity and installed on roof of Paxton Wholesale Grocers, Danville, Illinois.

(Small photo shows other side of BOHN ACS unit.)

BETZ DIVISION
BOHN
DANVILLE, ILLINOIS

*Manufacturers of Commercial
Refrigeration. Industrial Air
Conditioning and Special Heat
Transfer Surfaces*

BOHN ALUMINUM & BRASS CORPORATION • BETZ DIVISION • DANVILLE, ILLINOIS

Circle No. 60 on Reader Service Card

PROBLEM

How to handle an old office building that seems to defy air conditioning

SOLUTION

Turn to Re-Heat

by Scholer Bangs, Western Editor

AIR conditioning existing buildings in a "virgin" metropolitan area offers an exciting prospect to engineers, contractors and equipment manufacturers.

But, here and there will be found an obstinate old building that seems to stubbornly defy all attempts at providing the benefits of manufactured climate.

Its steel and masonry structure will be massive; its floors, walls and ceilings solid. There will be no ventilation ducting which might simplify the installation of modern air conditioning. In fact, no ventilation ducting could have been installed in the first place. There would have been no space for it.

An immediate reaction might be: "Scratch one double duct system prospect!"

Actually, however, experience has shown that such an apparently hopeless situation may be resolved by asking one simple question:

"How about re-heat?"

A convincing answer is seen in the \$1,250,000 project that provided air conditioning for the 10 upper floors of Southern California Gas Co.'s 13-story main office building in Los Angeles. Erected in 1925, it is just such a building.

It is believed to be the only office building on the West Coast employing re-heat air conditioning.

W. D. Pettibone, the gas company's area superintendent of special services, concedes that adoption of the re-heat system was necessity's choice. Available space would not have supported a now-standardized supply-and-return double duct system.

In more than one respect it proved to be a fortunate selection:

1. It permitted piecemeal pay-as-you-go installation, floor-by-floor, extending over a period of 10 years;

2. It minimized structural modifications and at the same time enabled them to be blended into office modernization;

3. It produced an unexpected bonus in virtually smog-proofing the air conditioned floors.

Since the start of the project in 1952, five floors have been air conditioned; the other five floors will be completed by 1962. The company painlessly budgets approximately \$125,000 a year for the work, and awards installation contracts for each floor on a bid basis.

As you might expect, structural compromises had to be made for system acceptance.

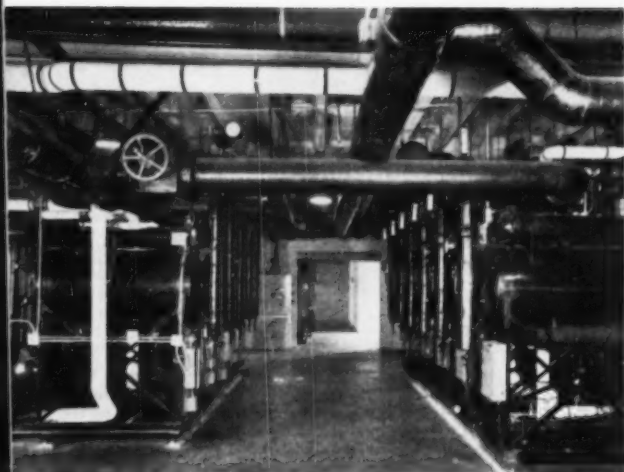
A 13th floor auditorium, now located in the basement of one of two adjoining new gas company buildings, was surrendered to give space to the system's primary heating and cooling cycle equipment—two Steamaster boilers rated at 75 and 150 hp, respectively, and a battery of 18 Servel 25-ton absorption units, 11 of which have been installed to date.

The one ready-made structural convenience in the building was a vertical trash chute, unused for many years. It offered an ideal, readily exposed conduit for service piping from the 13th floor equipment.

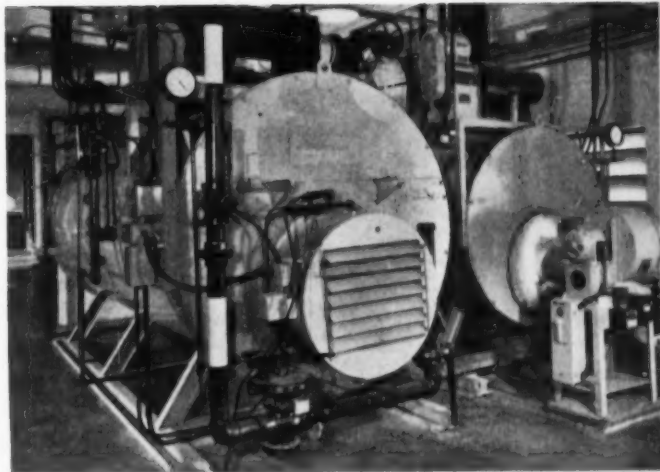
On each floor, and adjacent to the trash chute, small office areas have been converted to fan rooms housing chilled water cooling coils and blowers.

False ceilings in main corridors provide the minimum space required for supply ducting from the fan rooms, and for mounting thermostatic heat exchangers in secondary bleed ducts leading into office areas.

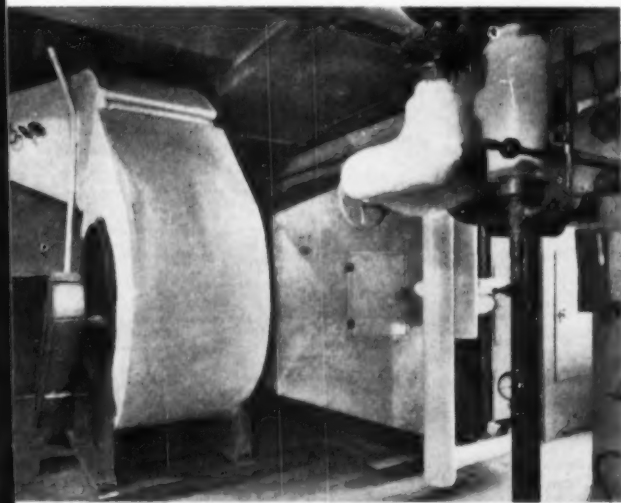
Within the offices, wall-length decorative enclosures contain bleed duct extensions to grills which release conditioned air horizontally just below ceiling level. Intake grills on the underside of the enclosures give



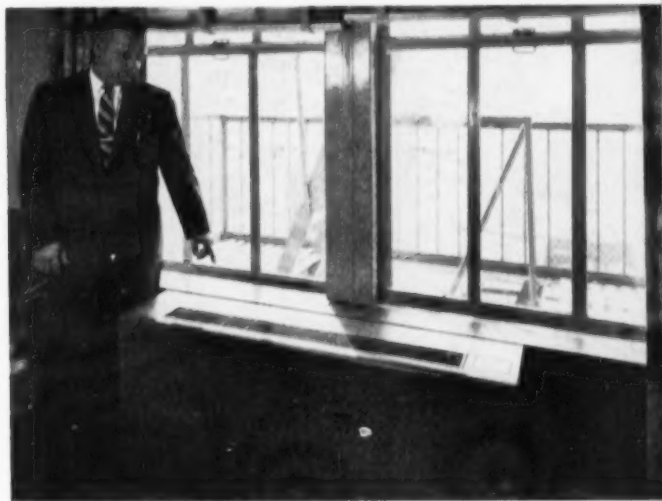
COOLING for the 13-story building is provided by this battery of Servel 25-ton absorption units. Eleven units have been installed; seven more will be added before job is completed.



HEATING is provided by these two "Steamaster" boilers, rated at 75 and 150 hp. Boilers are mounted with the cooling units in a top-floor machinery room that used to be an auditorium.



FAN ROOM like this is located on each air conditioned floor. Chilled water pipes lead from absorption units to coil in air intake at right. Blower discharges air into main corridor ducts.



INTERIM CONDITIONING is provided by individual room units while installation of central system is being completed. Window-type conditioners were used in most of these offices.

entry to return ducts leading back to fan rooms for 80% recirculation of air.

You might consider the piecemeal installation a serious disadvantage in leaving many floors without air conditioning over the 10-year period; this has not been the case.

Floors awaiting the installation of permanent equipment have received adequate interim air conditioning through generous use of small standard window-installed room conditioners, easily removed when no longer needed. Ninth floor executive offices, which will be among the last to be permanently air conditioned, are equipped with Trane "Climate Changer" units.

So far, the interim installations have run into only one snag.

The 10th floor office of the manager of special services, used extensively for conferences, required air conditioning. However, a fire escape outside its twin windows precluded installation of a protruding window unit.

It was discovered, however, that in lieu of a window unit a Drayer-Hanson "Spotaire" air conditioner would fit just beneath the window sills, and would present no serious obstacle to the fire escape exit.

But connecting the unit's heating and cooling cycles to the distant hot and chilled water service lines in the

Continued on page 118

S. & M. Schwartz & Co.
DIVISION OF STRAUSSKOPF & CO.
4000 PARK AVENUE, NEW YORK 37, N. Y.

MANUFACTURERS OF
Complete Food Market Interiors

Prospect's Name
Address
City

Dear Sirs:

We have recently been informed that you may be interested in one of our services or fixtures.
Enclosed please find some literature that you may want to inspect. We recently opened a new market in your area (give name and address). If you have an opportunity to see it you may get an excellent idea of the type of work we do.

Mr. (Salesman) of our office will call and arrange for an appointment at your earliest convenience.

Thank you very much for your interest in our fixtures. I am personally looking forward to the opportunity of meeting you.

Very truly yours,
S.M. SCHWARTZ & CO.

Hilton I. Schwartz
Executive Vice President

S. & M. Schwartz & Co.
DIVISION OF STRAUSSKOPF & CO.
4000 PARK AVENUE, NEW YORK 37, N. Y.

MANUFACTURERS OF
Complete Food Market Interiors

Customer's Name
Address
City

Dear Mr. Customer:

I want to take this opportunity to personally thank you for your order.
Should you need any assistance or advice with any of your contractors, such as electric, plumbing, etc., please ask for Harry Colter. Should you have any questions involving refrigeration, also ask for Harry.

If a question involving your store layout should arise, Alex Farrow is your man. Mark Golding's job is to supervise production at the plant and delivery. He will be glad to talk to you concerning your job.

Again thank you very much for the opportunity to be of service to you.

Very truly yours,
S.M. SCHWARTZ & CO.

Hilton I. Schwartz
Executive Vice President

HLS:PP

METROPOLITAN, N. Y. DISTRIBUTORS OF FRIEDRICH FLOATING AIR P.

Our Salesmen

TO PROSPECTS: Soon as a new lead is received, this introductory letter is sent to the prospect to pave the way for the salesman's initial call.

TO CUSTOMERS: Once the order is signed, this personalized "thank you" letter is mailed to each customer, telling him who to contact about any job problem.

FOR THE RECORD: Filling out this form prior to final planning of the installation is the only bit of paper work required of a Schwartz salesman.

S. & M. SCHWARTZ & CO. JOB INFORMATION SHEET

STORE NAME _____ ADDRESS _____
NEAREST CROSS STREET _____ TELEPHONE NO. _____

STORE FRONT
Window Sizes _____ (1) Width _____ Height _____
_____ (2) Width _____ Height _____
Doors—Single or Double _____ (1) Width _____ Height _____
_____ (2) Width _____ Height _____
Is Glass Removable? _____
Work to be done on front? _____ By Us _____ By Others _____
(Detail in Production Sheet)
Will All Planned Fixtures Go Thru' Door Opening? _____
Grill in Front? _____ Reason _____

INSIDE STORE
Are there any Posts, Columns, Projections, Ductwork, Steam or Water Pipes? _____
Detail Size and Location on Plan _____
Any Trap Doors? _____ Size _____ Location on Plan _____
Hidden Windows? _____
Ceiling Height _____ Condition _____
Wall Condition _____ Painting or Wallpapering? _____

FLOOR
Wood or Cement _____ Condition _____ Two Levels? _____
Trap Doors to be cut? _____
Tile, Wood or Linoleum to be laid? _____ Square Feet _____

BASEMENT
Indicate on Plan if it does not match store in width and length? _____ Height? _____
No Basement? _____ Where do Machines go? _____

ELECTRICAL DATA
Current Available: A.C. _____ D.C. _____ Voltage _____ Single Phase _____ 3-Phase _____
Are We Doing Electric Work? _____ Lights _____
Existing Meter Capacity _____ Amps _____

PLUMBING
Slop Sink Available? _____ Pipe Lines to Move? _____
Toilets or Sinks to Move? _____ Gas Water Lines to Install? _____
Drains to Install? _____ Radiators to Move? _____

WALK-IN BOX
Overall Dimensions _____ Width _____ Depth _____ Height _____
Freezer _____ Regular _____ Meat _____ Dairy _____
Blower _____ Coils _____ Combination Reach-in _____
Type Wood Finish: Interior _____ Exterior _____
Type Front Facing _____ Thin _____ Handware _____ Meat Rails _____
Entrance (Location Indicated on Plan) _____
Door Right _____ Left _____ Center _____
Insulation Type _____ Thickness _____
Shelves _____ Flooring _____ Drain _____

EXTRAS _____

Spend Their Time *SELLING!*

They don't make any layouts, they don't prepare any estimates,
they don't supervise any installations . . . but they DO
turn in a whopping volume of commercial refrigeration business!

by Milton I. Schwartz

TIME is one of the most important tools any salesman has at his command. The more time a salesman is able to devote to actual selling—all other factors being equal—the more deals he will close, the more signed orders he will bring in, the more money he will make for his company and for himself.

Outside of top executives, our 10 salesmen are the highest paid men in our organization. Obviously it is to our advantage to utilize their time as wisely as possible. This means giving them all the time possible to do what they are paid to do . . . SELL.

We have organized our entire operation with this aim in mind. Result: our salesmen do little else but sell.

They make no plans or layouts. We hire draftsmen to do this for them, at considerably less money than we pay our salesmen.

They prepare no estimates. This task is left to a full-time inside man who employs dictating machines, secretaries, and typists as his able assistants.

They don't supervise the installation of equipment. We have a full-time job supervisor who handles that responsibility.

This makes our salesmen "sales engineers" in the truest sense of the term. Not men who are half salesman and half engineer, but men who are skilled specialists in the art of engineering a sale all the way from the initial contact to the signed order. Beyond that point their only responsibility is to see that each customer remains completely satisfied with the job our company does for him.

To show how this carefully planned system works out in actual practice, let's trace the steps of one of our typical sales from start to finish.

A lead comes in from one of our sources, perhaps by phone. It is quickly checked on our cross file to make sure that it is really a new lead.

If it is, we immediately send the prospective customer a personally typed letter explaining that we have learned he may be interested in some of our equipment or services. We enclose any literature that may be pertinent, and assure him that one of our salesmen will call him soon to arrange for an appointment. As our salesmen operate basically on a territorial arrangement, we generally are able to mention in the letter the name of the salesman who will make the contact.

In addition, we suggest that the prospect may want to look at one of our comparable installations in his neighborhood. We include the name and address of such an installation.

There are two schools of thought on the advisability of encouraging prospects to visit your jobs without being accompanied by a salesman. Some dealers hold that it is dangerous. We have always maintained, however, that if your customers are satisfied you have nothing to fear from letting them talk to prospects. In fact, such "unchaperoned" conversations often prove to be one of our most effective sales clinchers.

We have found that sending out this initial letter immediately upon receipt of a lead sometimes saves the salesman many calls. Thus it has proved to be an effective means of saving a salesman's time and making him more productive.

After this initial letter has been sent out, the salesman is given the lead slip with the understanding that he will call the prospect the next day. That one-day delay is extremely important. It gives us an opportunity to qualify the prospect by checking on his credit rating. We don't want to waste sales efforts on doubtful accounts.

When the salesman goes out to discuss the job with the prospect he surveys the situation carefully. He then phones in to our office all pertinent information, including any special factors that should be taken into consideration in preparing the plans for this in-

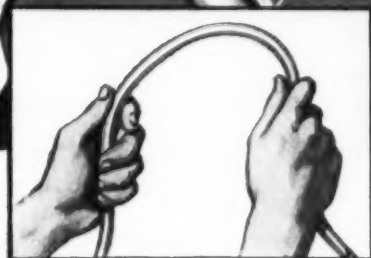


REVERE DRYSEAL COPPER REFRIGERATION TUBE

There are no hangover blues when you take to bending DRYSEAL. Why it's so dead-soft that you bend it with your hands easy as pie . . . no tools needed. And the special temper and ductility of DRYSEAL also make it easy to flare for compression fittings without splitting.

Another very important feature of DRYSEAL is the double-crimp seal at each end of the tube. This is the final step in manufacturing, that immediately follows a special cleaning and dehydrating operation, which keeps dirt and moisture from entering the tube. The seal is made in such a way as not to change the diameter of the tube so that it can pass through any opening large enough for the tube itself.

Also you'll find the job-size, 50-foot, one-coil pack easy to handle, light weight, economical and sturdily made to assure protection of the tube.



REVERE

COPPER AND BRASS INCORPORATED
Founded by Paul Revere in 1801
230 Park Avenue, New York 17, N. Y.

Mills: Rome, N. Y.; Baltimore, Md.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Brooklyn, N. Y.; Newport, Ark.; Ft. Calhoun, Neb. Sales Offices in Principal Cities, Distributors Everywhere.

Circle No. 61 on Reader Service Card

NOVEMBER, 1957 • COMMERCIAL REFRIGERATION



MILTON I. SCHWARTZ is executive vice president of S. & M. Schwartz & Co. Div. of Straus-Duparquet, Inc., one of the largest commercial refrigeration distributors in the New York metropolitan area. Eloquent testimony to his sales know-how is offered by the fact that under his direction the company's sales volume climbed from \$60,000 in 1945 to \$1-1/2 million last year. 1957 volume is expected to reach \$2-1/4 million.

OUR SALESMEN SPEND THEIR TIME SELLING!

stallation. Then one of our draftsmen will go out to the location to make the required measurements and obtain the necessary mechanical details of the job.

After he has discussed the prospect's ideas with the salesman, the draftsman prepares plans of the installation and makes three sets of white prints on our duplicating machine. With our volume of work, we estimate that having our own machine saves us several hundred dollars a month in time and expenses. One of the white prints goes to the salesman, one to our estimator, and one is held for the customer's estimate file that we maintain in our office.

Working from the prints and all other information available, the estimator prepares the estimate for this installation. This estimate then is gathered together with the white print, whatever manufacturers' literature may be required, and all other pertinent data, and placed in a business-like proposal folder.

Remember — all this time the salesman is "out on the street", making more contacts and engineering more sales.

We never mail a proposal. Instead, the salesman takes it out to the prospect so that he can go through it item by item, explain every phase of the proposed installation, and answer any questions the prospect might raise.

Then comes the salesman's only bit of paper work. He fills out a printed Job Information Sheet that describes in detail such physical factors as door openings, basement and floor conditions, and all work to be subcontracted. This latter factor is extremely important, for it makes it easier for us to coordinate all of this work from our office.

The next day the salesman comes into the office and dictates the production sheet for the job. This is always an individually prepared sheet and not a printed form, as every job differs. The production sheet refers to the white print and the job number. It contains the model numbers of all machines and fixtures, refrigerated or not. On any special fixture not includ-

ed in our very complete catalog, the salesman explains the details to the drafting department where complete drawings of this fixture are prepared.

At this point the customer is called to our office to personally OK each of these special drawings. Insisting upon his signature on them eliminates any possibility of later misunderstandings. If the customer has not previously signed the formal job contract, he does so at this time.

The original proposal, job information sheet, credit report, production sheet, white print, contract, deposit check, and any supplementary notations concerning the installation, are carefully checked over by one man who specializes in this activity. Then the complete job folder is placed on my desk for approval. Following approval of the order, a copy of the production sheet, white print, and any special fixture drawings are distributed to the plant foreman, refrigeration manager, installation foreman, job supervisor, and the salesman.

To coordinate all of the various elements involved in any one sale, we normally hold an executive staff meeting every Friday morning. Our estimator, outside job supervisor, production manager, service manager, office manager, and general manager meet with me to discuss the work of all departments for the following week and to air any constructive criticism of the company's operations.

That's the story of how our sales are made. But that's not the end of the salesman's responsibility. I mentioned earlier that we do not expect any salesman to actually supervise the installation of any job he sells. We do expect him, however, to make frequent contact — almost daily, in many instances — with the customer during the installation period, just to "hold his hand" and make sure that he is perfectly satisfied with every detail of the way the job is progressing.

There is an added benefit in this contact, too. Frequently, a new installation will attract the attention of other merchants who may be planning similar facilities, and they'll drop by just to see how the job is shaping up. This gives the salesman a perfect opportunity to start another sale on the way.

Suggested Review of Financial Factors Vital to Your Business Success

IMPORTANT NOTE: For explanation of terms, refer to the definitions included in the accompanying article.

- 1 What is the percentage of your Profit for 1956 (or nearest fiscal year) on your Capital and Surplus _____ %
(Divide Net Profit for 1956 by total of all Capital & Surplus as of December 31, 1956.)
- 2 What is the ratio of Current Assets to Current Liabilities? _____ to 1
(The total of Current Assets divided by the total of Current Liabilities.)
- 3 What is the ratio of Inventory to Net Working Capital? _____ to 1
(Inventory divided by the Net Working Capital.)
- 4 What percentage of Tangible Net Worth is invested in Net Fixed Assets? _____ %
(Net Fixed Assets divided by Tangible Net Worth.)
- 5 What is the Net Profit (after taxes) percentage of Tangible Net Worth? _____ %
(Net Profit divided by the Tangible Net Worth.)
- 6 What is the Net Profit percentage of Net Working Capital? _____ %
- 7 What is the ratio of Sales to Tangible Net Worth? _____ to 1
(Sales divided by Tangible Net Worth.)
- 8 What is the ratio of Sales to Net Working Capital? _____ to 1
(Sales divided by Working Capital.)
- 9 Inbound Transportation Costs. _____ %
on COST of goods sold
- 10 What is your Average Collection Period? _____ days



MANY an otherwise well-operated business has "gone down the drain" because its owners or managers have failed to keep a close enough check on the mechanics of the firm's business operations and to review frequently enough its financial situation.

In this respect, every commercial refrigeration or air conditioning dealer, distributor, contracting firm, or installation and service organization has the same problems as any other type of business. There are certain basic factors that must be kept constantly in balance to maintain sound business results, re-

Keeping a close check on these vital elements can help keep your business out of financial hot water

GUIDEPOSTS

to sound financial operations

regardless of the nature of the activities in which the firm is engaged.

A list of these 10 fundamental financial factors is presented with this article.

The knowledge and use of these ratios can be helpful to the business management in many ways. Whether you know it or not, your banker or finance company undoubtedly checks many of them before determining how much credit to extend to your firm.

While these 10 guideposts to sound financial operation are basic to any business, it would be wise for you to go over this list with your accountant, your banker, or even the district representative of the manufacturer whose line you handle to determine exactly what ratios are recommended for your particular company to maintain.

DEFINITIONS

CURRENT ASSETS (See Guidepost 2): Total of cash; accounts receivable for the sale of merchandise in regular trade quarters, less any reserves for bad debts; advances on merchandise; inventory, less any

reserves; listed securities not in excess of market; state and municipal bonds not in excess of market; and United States Government securities.

CURRENT LIABILITIES (See Guidepost 2): Total of all liabilities due within one year from statement date, including current payments on serial notes, mortgages, debentures or other funded debts. This item also includes current reserves such as gross reserves for Federal income and state and local taxes, and for contingencies set up for specific purposes, but does not include reserves for depreciation.

INVENTORY (See Guidepost 3): Merchandise on hand and in transit.

NET WORKING CAPITAL (See Guidepost 3): The excess of the current assets over the current liabilities.

FIXED ASSETS (See Guidepost 4): The sum of the cost or appraised value of land, as the case may be, and the depreciated book values of buildings, leasehold improvements, fixtures, furniture, machinery, tools and equipment.

TANGIBLE NET WORTH (See Guideposts 4, 5 and 7): The sum of all outstanding preferred or preference stocks (if any) and outstanding common stocks, surplus, and undivided profits, less any in-

tangible item in the assets, such as good-will, trademarks, patents, copyrights, leaseholds, mailing lists, treasury stock, organization expenses, and underwriting discounts and expenses.

NET PROFITS (See Guideposts 5 and 6): Profit after full depreciation on buildings, machinery, equipment, furniture, fixtures and other assets of a fixed nature; after reserves for Federal income and state and local taxes; after reduction in the value of inventory to cost or market, whichever is lower; after charge-offs for bad debts; and after all miscellaneous reserves and adjustments; but before dividends or withdrawals.

INBOUND TRANSPORTATION (See Guidepost 9): The percentage of the cost of merchandise represented by inbound transportation costs, including inbound freight, express, parcel post or trucking charges.

AVERAGE COLLECTION PERIOD (See Guidepost 10): The number of days that the total of trade accounts receivable (including assigned accounts, if any), less reserves for bad debts, represents when compared with the annual net sales. Formula — divide the annual net sales by 365 days to obtain the average sales per day. Then divide the total of accounts receivable by the average sales per day to obtain the average collection period.

**YOU'LL FIND THE ANSWER
TO YOUR SERVICE PROBLEMS AT**



VIRGINIA[®]
Chemicals

Important news is waiting for you at the "Virginia" exhibit—news of how to build more year-round business, get more customers and boost your profits! And be sure to see the newest additions to the line of "Virginia" refrigeration products.

- *Something new in maintenance of water cooled equipment!*
- *Something new in refrigeration oils!*
- *Something new in liquid scale remover packaging!*

Pay us a visit when you're at the show
—it will pay *you* dividends!

BOOTH 549

Refrigeration Division
VIRGINIA SMELTING COMPANY

284 Jefferson St., West Norfolk, Va.



by Arthur H. Farr

don't overlook

The Importance of Insulation in residential cooling

IN discussing the importance of insulation in residential cooling, we might as well start with a brief review of fundamentals. Heat flows "downhill", or from something warm to something cold; and heat moves in three ways: by conduction, convection and radiation.

1. Conduction is the flow of kinetic energy through the particles of the material, requiring no motion of the matter itself. Normally, the denser the material, the better conductor of heat.

Air—which has a very low density—is a poor conductor of heat, and thus can be classed as a resistor or insulator of heat. In residential problems of heat flow, conduction normally accounts for only 10% of the total heat flow.

2. Convection is the motion resulting in a fluid from the differences in density, and therefore can be described as the heat transfer

produced by the actual movement of a fluid.

We know that air which has been heated will rise, and air which has been chilled will fall. In residential heat flow, convection normally accounts for 10% to 40% of the combined heat flow.

3. Radiation is the transmission of energy by means of electromagnetic waves through space. The waves have no temperature, but the radiant energy of any wave length may, when absorbed, become thermal energy and result in an increase in temperature of the absorbing body.

Thus, an infra-red heater located on a factory ceiling will not heat the air space directly, but the waves will strike the concrete floor, raising the temperature of the concrete which absorbs the waves.

Experts will vary in their estimates of the ratio of radiant heat flow to total flow in a residence from 50% to 80%, but all agree that radiation is the largest factor.

Many air conditioning contractors are being asked by architects and home owners to advise them on certain basic requirements necessary for the installation of a satisfactory and economical heating and cooling system. In most cases, the contractor finds himself specifying the insulation requirements for the home, in addition to the heating and cooling equipment.

Therefore, he has a responsibility to prescribe in exact terms the thickness of insulation required,

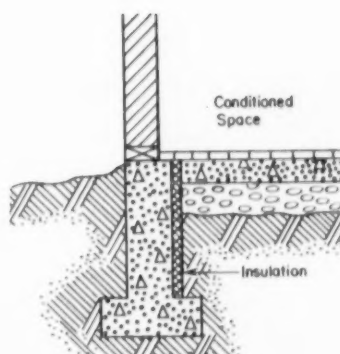


Fig 2— Slab Construction

the type of insulation preferred and where it should be applied. Since radiated heat represents from 50% to 80% of the total heat loss (or gain), it follows that a clear understanding of the value of reflective insulation is necessary.

Practically all common building materials will reflect some of the radiant waves striking their surfaces. The percentage of radiant heat that a given material reflects is known as its "reflectivity". Plaster, brick, slate and wood have surface reflectivity values ranging from .02 to .10, which means that they will reflect 2% to 10% of the radiant waves striking them.

A few highly polished metals have excellent reflective characteristics, but the most practical and economical to use is aluminum, with a reflectivity of .95. This means that only 5% of the radiant waves striking an aluminum sur-

Continued on page 130

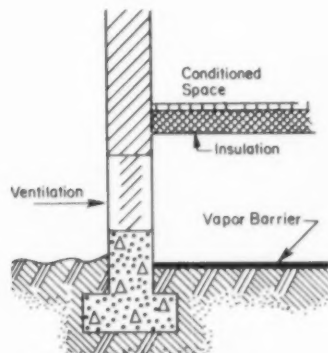


Fig 1— Crawl Space Construction

EMERGENCY CALL:

*Photos and information
courtesy of RCA*



11:03 Luncheonette owner Irving Schwartz calls for emergency refrigeration service.

effective use of two-way



11:03 Schwartz's call is received by switchboard operator at Pioneer's service headquarters. She relays it to the dispatching office.



11:04 Receiving customer call, assistant dispatcher Charles Hendrickson (left) pulls Schwartz's service record card and hands it to chief radio dispatcher Frank Piscitello.



11:05 Dispatcher Piscitello assigns service truck 313, already in the area, to handle Schwartz's emergency call. Code "CS" tells him that the customer's ice cream is soft.



11:06 Serviceman John Newton in truck 313 radios acknowledgement of call as he speeds toward customer's location. Schwartz had phoned just 3 minutes before.



11:12 Just 9 minutes after customer's telephone call was received at service headquarters, Newton arrives at Schwartz's luncheonette and is greeted by proprietor.

radio put this refrigeration serviceman

On the Spot In 9 Minutes!



11:14 Quick check shows trouble is caused by clogged condenser on self-service ice cream cabinet. Newton cleans it out and makes necessary adjustments.



11:38 Back in truck after putting Schwartz's refrigeration equipment in top working order, Newton radios job report to headquarters, receives next assignment.

ONE recent morning, Irving Schwartz, who operates a modern luncheonette in Franklin Square, Long Island, slid back the lid of his self-service ice cream cabinet and discovered to his dismay that many of the packages inside were soft, almost mushy.

A quick check disclosed that cabinet temperature was too high for proper operation. Schwartz put in a hurried telephone call to the service department of Pioneer Ice Cream Div., Borden Co.

The clock behind the fountain read 11:03.

Schwartz's phone call promptly set into action Pioneer's efficient service organization, equipped for two-way radio communication with all service vehicles.

The 11:03 call from Franklin Square filtered through the switchboard at Pioneer's radio headquarters and into the ear of assistant dispatcher Charlie Hendrickson. As he spoke with Schwartz, Hendrickson pulled the customer's record card from a convenient file. He made some brief notations on this card and passed it to chief dispatcher Frank Piscitello.

The time was 11:04.

Dispatcher Piscitello immediately renewed contact with John Newton, one of his servicemen who had just reported in from a call near Franklin Square.

"Pioneer calling 313."

"313, Over."

"313 — Irving Schwartz, 763 Hempstead Turnpike, Franklin Square, CS." (CS is a code designation for ice cream soft, an emergency.)

"313, Code 7. Received transmission. Out."

At 11:06 Newton shifted into second gear and was on his way to the Schwartz establishment. Six minutes of driving in moderate traffic brought him the 2½ miles to the luncheonette, and he was ready to go to work at 11:12.

Elapsed time from emergency call to arrival of serviceman — 9 minutes.

Continued on page 120

SIMPLE FORMULA for determining total cost per year of air conditioning systems

1

Divide estimated installed cost of the system by the average life expectancy of equipment. This is ownership cost.

2

Estimate yearly operating cost from manufacturers' data and anticipated weather and hours of operation.

Total yearly cost is the sum of ownership and operating costs.

Interest, taxes, insurance and rental value of space omitted for simplicity in making comparison between systems.

Cost

THERE are five basic types of air conditioning systems generally used in commercial and residential structures: (1) self-contained window or room conditioners in each room; (2) commercial package units, used either singly or hooked together in a multiple system; (3) low pressure duct system; (4) high pressure duct system; (5) individual fan-coil units using chilled or heated water.

The first step in deciding which of these systems is the right one for any particular job is to determine performance requirements, characteristics of the building, and kind of occupancy. The second step is to select the system that will meet these requirements at minimum cost per year and, in an existing building with minimum alterations.

To be realistic, cost comparisons between systems should be made on a total cost-per-year basis, rather than on initial cost alone. Conceivably, a system costing \$20,000 to install might cost less per year than another serving the same area at initial cost of only \$10,000.

If the former has equipment life expectancy of 20 years, ownership cost per year will be \$1,000. The latter might have equipment life expectancy of only five years and therefore cost \$2,000 per year to own, even though the initial cost was only half that of the former system.

This comparison is not extreme. Initial costs of different systems may vary more than 100%. The Bureau of Internal Revenue has, in special cases, permitted writing off the cost of certain systems within a period of five years, indicating that longer life can not be assumed. The usual amortization period allowable for central station equipment is 15 years or 6 2/3% per year. It is not unusual to find equip-

ment in excellent operating condition after 20 years or more.

Life expectancy of the building or terms of the lease may have an important bearing on the kind of system that is indicated. Ductwork, which represents a substantial part of the cost of some systems, may be considered to have a life expectancy the same as that of the building. In most cases, it would seem unwise to pay a premium for any system with a life expectancy greatly exceeding that of the building.

Operating cost should be added to that of ownership to determine total cost per year. This varies considerably with different systems. Operating cost includes power, water, maintenance and labor. Fixed costs such as interest, taxes, insurance and rental value of space occupied may differ sufficiently between some systems to warrant consideration.

Some types of systems are now being installed in both new and existing buildings which, a short time ago, would have been considered impractical. A brief look at the status of each of the five systems previously mentioned, and those features which make it adaptable to particular buildings, will be helpful in matching the system to the job.

Self Contained Room Conditioners

Most familiar in this field is the window room unit. It is available for mounting all outside, all inside, or in any position between. Thin models extend little, if at all, either way. Inverted L models can be hung over window sills and not interfere with window operation. Window units can be installed through

by Edward Dowis

When it comes to determining the most practical system
of air conditioning for any particular application . . .

Per Year Is the Key

openings in walls. They can be equipped with reverse cycle or electric heating equipment for all-year conditioning within their capacity.

A most important development in the room air conditioner field is an in-wall unit equipped with a steam or hot water coil and prewired controls to make it a truly all-year conditioner. Space is conserved by installing each unit in a sleeve inserted in the wall during construction. The sleeve can be installed to provide for optional air conditioning by the tenant if desired at a later time.

The sleeve is a constant reminder to the tenant that air conditioning is available at practically no initial cost except for equipment. The electric outlet is provided when the sleeve is installed.

In existing buildings, sleeves can be installed by making suitable wall openings. Some large hotels and apartments are now being conditioned in this manner. The usual location is under a window, giving the advantages of perimeter cooling and heating. The only piping required is for steam or hot water supply and return. In existing buildings this is taken from the radiators which the units replace.

The heating coil, being supplied with steam or hot water from the building, is independent of cooling system capacity. A speed control switch can provide the amount of air most desirable for heating, cooling or ventilation.

Room units are relatively low in cost. Installation cost is low to moderate. Conditions in each room, including ventilation, are independently controlled. Electricity can be readily metered to the tenant.

Installation of air cooled units generally is limited to rooms with outside walls. Water cooled conditioners may be installed anywhere, but require water and con-

densate drain piping. Special wiring is required when a considerable number of units are installed in an existing building.

All service operations, including filter replacement, must be carried on in occupied rooms. Room conditioners are generally considered to have a shorter life expectancy than larger units.

Commercial Package Conditioners

Commercial package air conditioning units are considered standard for small stores. Industrial plants and department stores of all sizes also have been successfully conditioned with equipment of this type. These units even have been widely used for residential applications. One hotel presently is being air conditioned with package units at a reported cost of less than \$300 per guest room. Each unit serves several rooms.

The typical package unit contains a complete refrigeration cycle, fan, filters and cabinet. Being factory assembled and wired, installed cost is less than that of a field-assembled system. Life expectancy of a good unit should be about the same as that of central equipment, normally 20 to 25 years.

Operating efficiency of a well designed commercial package conditioner will compare favorably with that of a central system. Such units are usually water cooled. Water may be taken from city mains or recirculated through a cooling tower.

Commercial package air conditioning may prove the practical answer to applications in which any of the following conditions exist:

Continued on next page

COST PER YEAR IS THE KEY

(1) Lack of space for a central system and necessary ductwork;

(2) Occupancy or use which may make future alterations necessary;

(3) Any condition where location of the unit within the conditioned space is practical;

(4) Where cooling is to be added to a warm air heating system.

Package conditioners have been installed on roofs and in basements. They may be found in old elevator shafts and ventilating wells. They have been suspended from ceilings and mounted on brackets and shelves fastened to walls both outside and inside. Steam and hot water coils are available for heating.

Package heat pumps are available, using either air or ground as the heat source.

Low Pressure Duct System

Where space and other conditions permit economical installation of ducts large enough to carry the required amount of air at low velocity (2000 fpm or less), a low pressure duct system offers many advantages. Important among these are:

(1) Operating noise level can be reduced to practically zero in the conditioned space.

(2) The system can be serviced outside occupied areas.

(3) Equipment and design data are available, if properly applied, to maintain any desirable condition.

(4) No equipment is required in conditioned areas.

(5) All air conditioning functions, including air movement and ventilation, can be controlled throughout the conditioned area.

Initial cost of a low pressure duct system may be higher than that of some other systems, but total cost per year may be competitive. Low maintenance cost, long equipment life, and high operating efficiency tend to keep overall yearly cost low.

Individual room or zone control is possible, with a low pressure duct system, by any one of several methods:

(1) A multi-zone conditioner may contain both a cooling and a heating coil. Mixing dampers, under control of a room or zone thermostat, can deliver air at proper temperature to the duct leading to each zone.

(2) A double duct system, one main for hot and one for cold air, may be installed with branches from both taken to each room or zone. Thermostatically controlled mixing dampers will supply the proper mixture to maintain desired conditions.

(3) A reheat coil may be installed in the branch duct leading to each zone. This coil is controlled by the zone thermostat to temper air to the required temperature.

Zone control is sometimes attempted by simply placing supply air dampers under control of the room thermostat, controlling not the temperature but the volume of air entering the zone. This method is

not generally recommended, because frequent opening and closing of supply air dampers adversely affects air distribution.

High Pressure Duct System

Among the more important developments in the air conditioning field at the present time are those which make possible the conditioning of large buildings with air supplied through small ducts.

Conventional duct systems can handle air at velocities limited to between 500 and 2200 fpm. Higher velocities produce objectionable noise. Newly developed sound control equipment now makes possible the design of duct systems capable of carrying air at velocities up to 6000 fpm and static pressures to 10" of water.

High velocity distribution has made possible the conditioning, with a central system, of buildings which could not possibly accommodate the relatively large ducts required for a low velocity system. The architect and engineer are permitted more freedom in design when they can install small ducts in narrow wall space between windows. Use of small ducts adds considerably to the rentable space in a building.

In addition to handling more air, high velocity systems can perform more cooling with each cubic foot of air delivered. In some systems, only outside ventilating air is cooled to a low temperature. This air is delivered to rooms through induction units which mix it with room air before it can reach the occupants. These induction units also deliver the air without objectionable noise.

Initial and operating costs of high pressure systems generally are somewhat higher than for low pressure systems. More power is required to distribute air at high pressure. Both systems are used in some buildings — low pressure for interior zones, and high pressure for perimeter areas.

Individual Fan-Coil Units

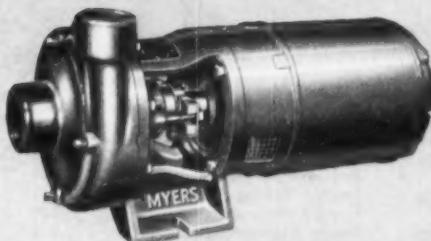
The use of small unit ventilators, commonly called fan coil units, was covered in some detail in an article by this writer in last month's issue. Installation of this system involves supply and return water piping, plus a condensate drain line, to each unit. A low amperage electric outlet is required for the fan.

Cooled or heated water, as required, is supplied to the coil from central refrigerating or heating equipment. Fan speed can be controlled at the unit for best operation. Either fan operation or water supply can be under control of the room thermostat.

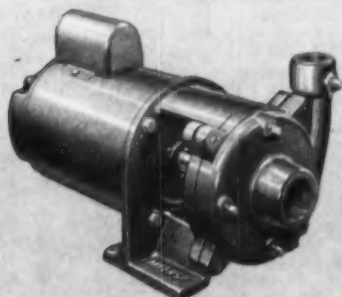
Cost of the unit ventilator system is variable, depending upon construction features of the building. This system is being installed in many buildings where heating piping has to be replaced. With fan coil units, it can be made to do double duty by providing both heating and cooling.



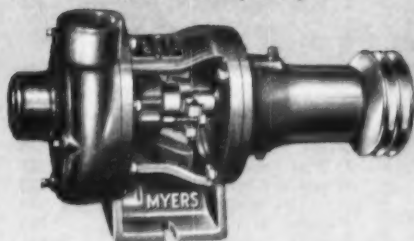
Model 190M Model 200M
Shown with rotary seal (available with stuffing box)



Model 125M Model 150M
Shown with stuffing box (available with rotary seal)



Model 100M—Rotary seal only



Model 125B Model 150B Model 200B
Shown with stuffing box
(available with rotary seal)



Model 100B—Rotary seal only

Myers Centri-Thrift Pumps for Air Conditioning

PAY OFF 3 WAYS

1 Longer Continuous Performance

- All-bronze impeller, accurately balanced for smooth operation.
- Removable bronze wearing ring, easily replaced.
- Corrosion resistant, stainless steel shaft.
- Backed with a warranty unsurpassed in the industry.

2 Complete Line to Meet Any Specification

- Full range of sizes: 1" x 1 1/4", 1 1/4" x 1 1/2", 1 1/2" x 2", 2" x 2 1/2", threaded discharge and suction. 1/4, 1/2, 3/4, 1, 1 1/2, 2, 3, 5 and 7 1/2 horsepower, motor-mounted or belt driven.
- Regularly fitted with high quality rotary ceramic-faced seal. Stuffing box may be specified on "125", "150" and "200" models.
- Choice of motors: single or three phase, single or dual voltage, open or enclosed.
- Competitively priced.

3 Field-proven Service

- Capacities to 240 gallons per minute. Heads to 140 feet.

WRITE TODAY FOR SECTION 210

ON MYERS CENTRI-THRIFT PUMPS

Myers® PUMPS

THE F. E. MYERS & BRO. CO. • ASHLAND, OHIO • KITCHENER, ONTARIO



A Guide to Exhibitors at the 10th Exposition of the Air-Conditioning & Refrigeration Industry

(For booth locations, see plat of exhibit hall on facing page)

A

A-P Controls Div.,	
Controls Corp. of America	310-11
Ace Cabinet Corp.	240-334
Acme Industries, Inc.	418-20
Addison Products Co.	611-12
Aeroquip Corp.	641
Aerovox Corp.	745
Air Conditioning & Refrigeration News	517
Air-Conditioning and Refrigeration Wholesalers	2
Airserco Mfg. Co.	146
Airtamp Div.,	
Chrysler Corp.	105-6-7-8-9-10
Alco Valve Co.	444
Allen-Bradley Co.	767-68
Allin Mfg. Co.	662
American Automatic Ice Machine Co.	503
American Brass Co.	521
American Coils Co.	663-64-65
American Gas Machine Co.	747-48-49
American Name Plate & Mfg. Co.	223
American Platinum Works	744
American Potash & Chemical Corp.	316
American Society of Refrigerating Engineers	1
Aminco Refrigeration Products Co.	207
Anderson Chemical Corp.	605
Ansul Chemical Co.	449
Appliance Manufacturer	211
Armstrong Cork Co.	163
Arrow-Hart & Hegeman Electric Co.	232

B

Bacharach Industrial Instrument Co.	222
Bally Case & Cooler Co.	667-709
Baltimore Aircoil Co.	648-49-50
Barr Mfg. Co.	542
Bastian-Blessing Co.	765-66
Bell & Gossett Co.	525-526
Bendix-Westinghouse Automotive Air Brake Co.	414
Binks Mfg. Co.	230-31
Bohn Aluminum & Brass Corp.	359
Brookside Corp.	428
Brunner Mfg. Co., Div. of Dunham-Bush, Inc.	349-50-52
Bryant Mfg. Co.	409
Buchbinder Bros.	328
Bundy Tubing Co.	545
Burr Oak Tool & Gauge Co.	523
Butcher Boy Refrigerator Door Co.	432
A. M. Byers Co.	711

C

Calgon Co., Div. of Hagan Chemicals & Controls, Inc.	226
Carbonic Dispenser, Inc.	212
Carrier Corp.	510
Carver Pump Co.	145
Century Electric Co.	625

Chase Brass & Copper Co.	562
Chemical Solvent Co.	263
Cobra Metal Hose	720
Coldin Cabinet Co., Inc.	135 & 239
Coleman Co., Inc.	320
Commercial Refrigeration & Air Conditioning Magazine	670
Copeland Refrigeration Corp.	118-19-20-21-22
Creamery Package Mfg. Co.	513
Curtis Mfg. Co.	559-607
Custom Dispenser, Inc.	726
Cutler-Hammer, Inc.	430

D

Davison Chemical Co., Div. of W. R. Grace & Co.	364
Dean Products, Inc.	308
Delco Products Div., GMC	448
DeMert & Dougherty, Inc.	673
Detroit Controls Corp.	557-609
Dole Refrigeration Co.	366
Dow Chemical Co.	756
Dunham-Bush, Inc.	346-47-48
Duro-Dyne Corp.	330
F. W. Dwyer Mfg. Co.	331

E

Elco Mfg. Co.	771
E. I. du Pont de Nemours & Co., Inc.	402
Electric Auto-Life Co.	674
Electro Dynamics Div. of General Dynamics Corp.	233-34
Elkhart Products Corp.	731
Emerson-Quint Koal	442
Emerson Electric Mfg. Co.	660-61
Erickson Industries, Inc.	217
Essex Wire Corp., R-B-M Div.	221
Evans Mfg. Co.	718
Evis Mfg. Co.	252
Encyclopedia Britannica	723

F

F5 Air Conditioning Corp.	315
Fafnir Bearing Co.	261
Fasco Industries, Inc.	554
Federal Refrigerator Mfg. Co.	148-49
Flexible Tubing Corp.	511
Fagel Refrigeration Co.	530
Foster Refrigerator Corp.	210
Frankell Mfg. Co., Inc.	165
Frick Co.	314
Frigidaire Div., GMC	758-59-60
Frigid Igloo Mfg. Corp.	168
Fueloil & Oilheat—Comfort Cooling Magazine	725
Furnas Electric Co.	654

G

Garman Co., Inc.	724
General Air Conditioning Corp.	266
General Chemical Div., Allied Chemical & Dye Corp.	437
General Controls Co.	626-27
General Electric Co., Bloomfield, N. J.	515
General Electric Co., Schenectady, N. Y.	111-12-13-14
E. D. Goodfellow Co., Inc.	616

H

Halstead & Mitchell	335
Harry Alter Co.	713
Heating & Air Conditioning Contractor Magazine	152
Henry Valve Co.	669
H & H Tube Mfg. Co.	258
Highside Chemical Co.	623
C. V. Hill & Co., Inc.	547
Holsclaw Bros., Inc.	220
Howard Refrigerator Co.	153
Howe Ice Machine Co.	710
Huck Mfg. Co.	412
Hussmann Refrigeration, Inc.	155

I

Ideal Cooler Corp.	170
Imperial Brass Mfg. Co.	205
Industrial Wire Cloth Products Corp.	622

J

Jacks-Evans Mfg. Co.	259
Jamison Cold Storage Door Co.	101
Jarrow Products, Inc.	238
Jordan Commercial Refrigerator Co.	529

K

Keco Industries, Inc.	354
Keeney Publishing Co.	704
Kelvinator Div. American Motors Corp.	453
Kenmore Machine Products, Inc.	307

SHOW HOURS

Exhibits at the International Amphitheatre will be open during the following periods:

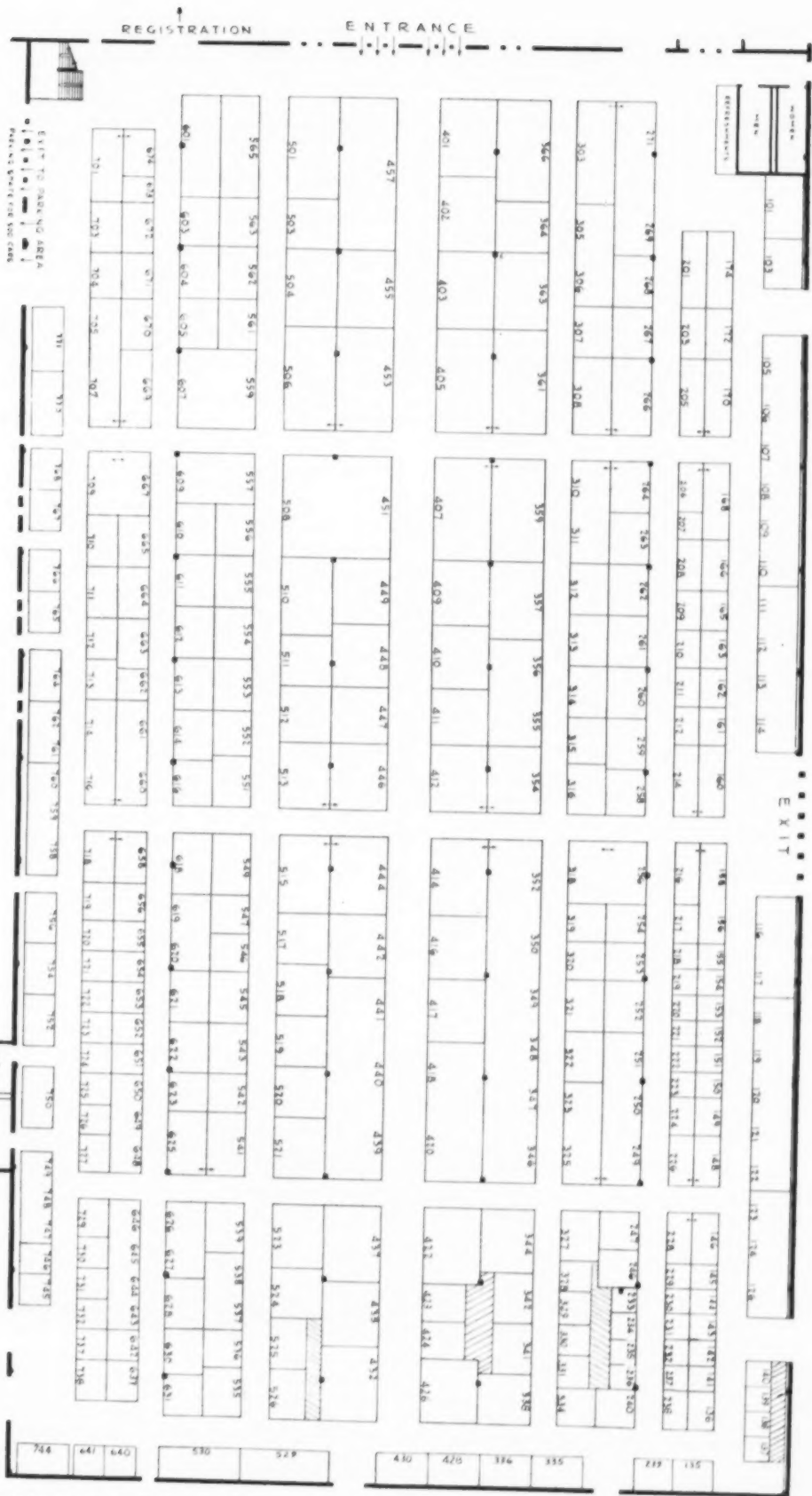
Monday, Nov. 18: 2 p.m. to 10 p.m.

Tuesday, Nov. 19: 10 a.m. to 6 p.m.

Wednesday, Nov. 20: 10 a.m. to 6 p.m.

Thursday, Nov. 21: 10 a.m. to 4 p.m.

Holsted St.



Dexter Park Ave.

GUIDE TO EXHIBITORS

Kerotest Mfg. Co.	519
Kirsch Co.	327
Koch Engineering Co., Inc.	328
Koch Refrigerators, Inc.	144
Kold-Hold Div., Tranter Mfg., Inc.	407
Kramer Trenton Co.	439-40-41

L

Larkin Coils, Inc.	405
Lau Blower Co.	543
Lehigh Mfg. Co., Div. of Lehigh, Inc.	156-58
Lewin-Mathes Co.	770
Linde Co., Div. of Union Carbide Corp.	319
Liquid-Freeze Corp.	761-62
Loriergan Mfg. Co.	403

M

McCord Corp.	206
McGray Refrigerator Co., Inc.	305-6
McIntire Co.	160
McQuay, Inc.	501
Madden Brass Products Co.	655
Marco Industries, Inc.	253
Marlo Coil Co.	705-7
Marley Co.	267
Jas. P. Marsh Corp.	201
Master-Bilt Refrigeration Mfg. Co.	729
Maurey Mfg. Corp.	140
George J. Mayer Co., Inc.	656
Mechanical Industries Production Co.	618
Meier Electric & Machine Co.	546
Metals & Controls Corp.	701
Metrex Valve Co.	142-43
Midwest Mfg. Co.	219
Milwaukee Electric Tool Corp.	746
Minneapolis-Honeywell Regulator Co.	561
Mitchell Mfg. Co.	422
Morrison Products, Inc.	262
J. W. Mortell Co.	732
Mueller Brass Co.	446
Mueller Climatrol Div., Worthington Corp.	506
Mundet Cork Corp.	721

N

National Commercial Refrigerator Sales Association	5
National-U.S. Radiator Corp.	269-71
Nickerson & Collins Co.	552

O

Olin Mathieson Chemical Corp.	537-38
D. W. Onan & Sons, Inc.	712
Owens-Corning Fiberglass Corp.	610

P

Pacific Lumber Co.	218
Paragon Electric Co.	313
Parham Industries, Inc.	730
Peerless of America, Inc.	322
Peerless Equipment Corp.	150-51
Penn Controls, Inc.	541
Pennsalt Chemicals Corp.	565
Perfection Industries, Div. of Hupp Corp.	455
Price & Rutzebeck	737

R

Ranco, Inc.	410
Reading Tube Corp.	103
Redmond Co.	264
Refrigeration Appliances, Inc.	401
Refrigeration and Air-Conditioning Contractors Association	3
Refrigeration Service Engineers Society	4
Refrigerating Specialties Co.	411
Recold Corp.	116-17
Refrigeration Research, Inc.	214
Remco, Inc.	336
Revcor, Inc.	719
Reynolds Metals Co.	451 & 508
Rheem Mfg. Co.	174
Rochester Products Div., GMC	321
Rotary Seal Div. Muskegon Piston Ring Co.	254
Rubatex Div., Great American Industries, Inc.	137

S

C. Schmidt Co.	224
Sealed Unit Parts Co., Inc.	162
Schnacke Inc.	673
Sherer-Gillett Co.	237
Silver Refrigeration Mfg. Co.	138
Small Business Administration	6
A. O. Smith Corp.	703
Southern Plastics Co.	139
Southwest Mfg. Co.	671
Sporlan Valve Co.	323-25
Sprague Electric Co.	166
Standard Refrigeration Co.	563
Stiles Karlsonite Corp.	329
Stoddard Industries, Inc.	652
Sub-Zero Freezer Co., Inc.	228
Sun Oil Co.	539
Superior Valve & Fittings Co.	556

T

Tecumseh Products Co.	457
Temprite Products Corp.	504
Tenney Engineering, Inc.	619-20
Texas Co.	203
Emery Thompson Machine & Supply Co.	722

Tork Time Controls, Inc.	651
Torrington Mfg. Co.	361
T O T Towers, Inc.	161
True Mfg. Co.	172
Tube Manifold Corp.	727
Tyler Refrigeration Corp.	256 & 318
Typhoon Air Conditioning Co., Div. of Hupp Corp.	303

U

United Cork Cos.	338
United Friguarator Engineers	229
United Refrigerator Co.	208-9
U. S. Air Conditioning Corp.	260
U. S. Rubber Co.	653
United Wire & Supply Corp.	764
Utility Fan Corp.	268

V

Vibration Mountings, Inc.	637
Victory Metal Mfg. Corp.	141
Viking Copper Tube Co.	312
Vilter Mfg. Co.	136
Virginia Smelting Co.	549
Henry Vogt Machine Co.	754

W

Wabash Corp.	154
Wagner Electric Corp.	672
Wall Tube & Metal Products Co.	642
Walton Laboratories, Inc.	752
Warren Co.	555
Watco, Inc.	235-36
Weatherhead Co.	738
Weber Showcase & Fixture Co.	247
Westinghouse Electric Corp., Pittsburgh, Pa.	249-50-51 & 750
Westinghouse Electric Corp., Springfield, Mass.	355-56
White-Rodgers Co.	714-16
Wilcolator Co.	658
Wilson Mfg. Co.	216
Wolverine Tube Div., Calumet & Hecla, Inc.	551
Worthington Corp.	123-24-26

Y

York Corp.	643-44-45-46
------------	--------------

MARSH OFFERS SHOW GUESTS FREE BUS RIDE



FREE BUS SERVICE between major Loop hotels and the International Amphitheatre will be provided by Marsh Instrument Co. throughout the 10th Exposition of the Air Conditioning & Refrigeration Industry. Buses are scheduled to operate at 15-minute intervals during Show hours. Morning runs will begin a half hour before the Show opens, and continue until a half hour after Show closing. This will allow exhibitors, as well as visitors, to take advantage of the service. Hotels at which buses will make regular stops are the Sherman, Morrison, Palmer House and Conrad Hilton.

SCHEDULE OF SHOW-TIME ACTIVITIES

Key to Association names and headquarters hotels:
ARI — Air Conditioning & Refrigeration Institute, Sherman Hotel.

ARW — Air Conditioning & Refrigeration Wholesalers, Morrison Hotel.

ASRE — American Society of Refrigerating Engineers, Shoreland Hotel.

NCRSA — National Commercial Refrigerator Sales Association, La Salle Hotel.

NHAW — National Heating & Air Conditioning Wholesalers, Morrison Hotel.

NWAHACA — National Warm Air Heating & Air Conditioning Association, Morrison Hotel.

NAPRE — National Association of Practical Refrigerating Engineers, Del Prado Hotel.

RACCA — Refrigeration & Air Conditioning Contractors Association, Drake Hotel.

Tuesday, November 12

- 8:30 a.m. **ASRE** Finance Committee (breakfast meeting).
- 12:30 p.m. **ASRE** Executive Committee luncheon.
- 6:00 p.m. **ASRE** Regional Directors dinner meeting.

Wednesday, November 13

- 10:00 a.m. **ASRE** Program Committee meeting.
- 2:00 p.m. **ASRE** committee meetings: Constitution and By-Laws; Meeting Sites and Facilities; Standards; Sections.
- 5:00 p.m. **ASRE** Council dinner meeting.
- 8:30 p.m. **ASRE** reception.

Thursday, November 14

- 9:00 a.m. **ARW** Manufacturers Relations Committee; luncheon at 12:00 noon. Meeting continues at 2:00 p.m.
- 9:30 a.m. **ASRE** technical session and domestic refrigerator engineering conference.
- 12:45 p.m. **ASRE** welcome luncheon.
- 2:30 p.m. **ASRE** technical session and refrigeration and meat packing conference; **ASRE** Research Committee meeting.
- 4:00 p.m. **ASRE** committee meetings: Admissions, International Affairs.
- 5:00 p.m. **ARW** Finance Committee meeting.
- 7:00 p.m. **ASRE** Publications Committee meeting.

Friday, November 15

- 9:00 a.m. **ARW** Directors meeting. **RSES** Directors meeting (all day). **ASRE** air conditioning conference and food preservation conference.
- 12:30 p.m. **ARW** Directors luncheon.
- 1:30 p.m. **ASRE** forums; inspection trip to Argonne Laboratories.
- 2:00 p.m. **ARW** Directors meeting (continued). **ASRE** committee meetings: Awards, Membership.
- 6:30 p.m. **ARW** Directors dinner with Region 6. **ASRE** cocktail party.
- 7:30 p.m. **ASRE** dinner dance.

Saturday, November 16

- 8:30 a.m. **ASRE** committee meetings: Membership Relations, Technical Coordinating.
- 9:00 a.m. **ARI** Exposition registration opens at International Amphitheatre. **ARW** Directors meeting (continued). **RSES** registration. **ASRE** technical session.
- 12:30 p.m. **ASRE** Council luncheon meeting.
- 1:00 p.m. **ARW** registration. **RSES** opening business session.
- 4:00 p.m. **RSES** educational session.
- 7:00 p.m. **ARW** Past Presidents dinner.

Sunday, November 17

- 8:30 a.m. **RACCA** registration.
- 9:00 a.m. **ARI** Exposition registration. **RSES** registration; education session to 5:00 p.m. **RACCA** Directors meeting.
- 9:30 a.m. **ARI** Directors meeting.
- 10:00 a.m. **ARW** registration.

Sunday, November 17 (Cont'd.)

- 12:00 noon **ARW** "Kickoff" luncheon. **NHAW** Directors meeting.
- 12:15 p.m. **NCRSA** Directors luncheon meeting.
- 2:00 p.m. **ARW** annual business meeting.
- 4:30 p.m. **NCRSA-CRMA** Joint Relations Committee meeting.
- 5:15 p.m. **ARW** 1958 Directors meeting.
- 5:30 p.m. **RACCA** reception and cocktail party.
- 6:30 p.m. **ARW** officers' reception; banquet at 7:30 p.m.

Monday, November 18

- 8:00 a.m. **NHAW** registration.
- 8:30 a.m. **RACCA** registration. **NCRSA** registration.
- 9:00 a.m. **ARI** Exposition registration. **ARW** general meeting. **RACCA** business meeting and open-forum discussion.
- RSES** registration and business session.
- 9:30 a.m. **NCRSA** general meeting. **NAPRE** business meeting; educational session at 10:30 a.m.
- 12:00 noon **RACCA** luncheon. **NHAW** luncheon.
- 12:30 p.m. **NCRSA** luncheon. General meeting 2:00 p.m.
- 2:00 p.m. **10th ARI EXPOSITION OPENS**. Closes 10:00 p.m.
- 2:15 p.m. **NHAW** panel workshop session.
- 3:00 p.m. **RACCA** Directors meeting.
- 6:30 p.m. **NCRSA** reception.
- 7:00 p.m. **RSES** annual banquet and entertainment.
- 7:30 p.m. **NCRSA** annual dinner. **NAPRE** informal party.

Tuesday, November 19

- 8:00 a.m. **NHAW** registration; general membership breakfast.
- 8:30 a.m. **RACCA** registration.
- 9:00 a.m. **ARI** Exposition registration. **RSES** closing business session.
- 9:15 a.m. **NHAW** membership meeting.
- 9:30 a.m. **NCRSA** general meeting. **NAPRE** educational session.
- NWAHACA** committee meetings. **RACCA** general meeting.
- 10:00 a.m. **ARI** Exposition open to 6:00 p.m.
- 11:30 a.m. **NHAW** business conference and buffet luncheon.
- 12:00 noon **RACCA** annual business luncheon.
- 12:30 p.m. **NCRSA** luncheon; general meeting 2:00 p.m.
- 7:30 p.m. **NHAW** annual banquet.

Wednesday, November 20

- 7:30 a.m. **NAPRE** breakfast session.
- 8:00 a.m. **NHAW** Trustees breakfast.
- 9:00 a.m. **ARI** Exposition registration.
- 9:30 a.m. **ARI** Credit committee meeting. **NAPRE** educational session. **NWAHACA** committee meetings.
- NHAW** panel workshop session.
- 10:00 a.m. **ARI** Exposition open to 6:00 p.m.
- 12:30 p.m. **NHAW** luncheon meeting; business session at 2:15.

Thursday, November 21

- 8:30 a.m. **NWAHACA** registration.
- 9:00 a.m. **ARI** Exposition registration.
- 9:30 a.m. **ARI** Air Conditioner Manufacturers Credit sub-committee meeting. **NAPRE** educational session. **NWAHACA** general meeting.
- 10:00 a.m. **ARI** Exposition open to 4:00 p.m.
- 11:00 a.m. **NAPRE** business session.
- 12:30 p.m. **NWAHACA** luncheon meeting; general session at 2:30 p.m.
- 4:00 p.m. **10th ARI EXPOSITION CLOSES**.
- 6:00 p.m. **NWAHACA** cocktail party.
- 6:30 p.m. **NAPRE** New Officers' reception; annual dinner at 7:30 p.m.

Friday, November 22

- 8:30 a.m. **NWAHACA** registration.
- 9:30 a.m. **NWAHACA** general session.

6 INDUSTRY GROUPS OFFER SHOW-TIME PROGRAMS

ARW Panel To Put Wholesaling Business Under Microscope at Group's "Open" Meeting

"LOOK What Can Happen to Your Business", a panel discussion in which wholesalers representing widely separated sections of the country will take part, will be a feature of the Nov. 13 "open" meeting of Air Conditioning & Refrigeration Wholesalers in Chicago's Morrison Hotel.

With John P. Glass, Chase Supply Co., Chicago, as moderator, panel members will be Peter H. Askew, Thermal Products, Los Angeles; Paul D. Cato, Texas Refrigeration Supply Co., Fort Worth; and Ned K. Mason, Mason Supply Co., Columbus, Ohio.

At the same session, Gerry Kinnally, James B. Clow & Sons, Chicago, will talk about "Merchandising", and will join the panelists for the discussion period that follows.

While the "regular" ARW sessions won't start until Sunday, Nov. 17, business meetings begin as early as Thursday, Nov. 14, when members of the manu-

facturers' relations and finance committees get together.

Friday, Nov. 15, will be occupied by ARW directors meetings and dinner with members of ARW Region 6.

Registration will open at 1 p.m. on Saturday, Nov. 16, and the annual Past Presidents' Dinner will be held at 7 p.m.

A "kickoff" luncheon at noon on Sunday, Nov. 17 in the hotel's Cotillion room will be followed at 2 p.m. by ARW's annual business meeting. Speaker at the luncheon will be Cliff Titus, supervisor of executive development, Beech Aircraft Corp., who will outline "The Magic of America".

Officers' reception and annual banquet will be held Sunday evening in the hotel's Grand Ballroom. New on the banquet program will be entertainment by the team of Bob James and Barney Richards, popular Chicago showmen.

Four "Conference" Sessions of ASRE

FOUR "conference" sessions will hold a major share of interest for members of American Society of Refrigerating Engineers during their 44th semi-annual meeting Nov. 14-16 at the Shoreland Hotel, Chicago.

The first conference, covering domestic refrigerator engineering, will coincide with the opening technical session at 9:30 a.m. on Thursday, Nov. 14. With R. S. Buchanan, Westinghouse Electric Corp., as chairman, conference subjects will include:

"Tube-on-Sheet Evaporators", H. W. Deuker, Hotpoint Co.; Roll-Forced Tube-in-Sheet Evaporator",

Explore Wide Range of Technical Subjects

J. B. Kelley, Westinghouse Electric Corp.; Fabrication and Processing of Refrigerator Components", G. V. Kingsley, Bohn Aluminum Co.; "Non-Metallic Bonding of Tube-on-Sheet", Edward Von Arb, Revco, Inc.; "Improvements in Materials and Processes", Harry Loehlein, Reynolds Metals Co.; "Protective Coatings", J. P. McAndrews, E. I. du Pont de Nemours & Co.

At the technical session, scheduled papers will cover:

"Thermal Conductivity Apparatus for Operation

Continued on page 142

New Light To Be Shed on Old Problems of Installers and Servicemen by RSES Talks

AVARIED program of talks and discussions on subjects of interest to refrigeration and air conditioning installation and service companies has been developed for the 20th annual convention of Refrigeration Service Engineers Society. Chicago's Morrison hotel will be the hub of RSES activities, with directors meeting on Friday, Nov. 15, a day in advance of regular educational sessions.

Beginning at 1 p.m. on Saturday, Nov. 16, will be

the formal welcomes from representatives of ARI and ARW, the address of RSES president William E. Tierney, and reports of other officers and committee chairmen. First educational session will start about 4 p.m., with a talk on "Stability of 'Freon' 12 and 'Freon' 22 Refrigerants" by Dr. Donovan E. Kvalnes, manager, Technical Freon Products Div., E. I. du Pont de Nemours & Co.

Continued on page 142

NCRSA To Take Long, Hard Look at Commercial Refrigeration Business of Tomorrow

MEMBERS of National Commercial Refrigerator Sales Association will be concerned with the problems of both today and tomorrow when they meet in their 11th annual convention No. 18 and 19 in the LaSalle Hotel, Chicago.

Officers' meetings and registration will precede the regular business sessions, which begin at 9:30 a.m. on Monday, Nov. 18 with a talk on "Quality" by S. W. Davis, Jr., NCRSA president. "Can Membership in the Association Cure All Industry Problems?" will next be answered by H. A. Hattenbach, first vice president.

First of two featured speakers at this session will be Henry M. Haase, president of York Div., Borg-Warner Corp. His talk is titled, "Which Way Does Harry Turn?"

Verne R. Martin, nationally known sales consultant and formerly general sales manager of the Maytag Co., will close the morning program with "Men Make the Difference".

The report of NCRSA secretary Marie H. Lawton will precede the "main dish" of the afternoon session, a panel on "The Store of Tomorrow".

Continued on page 143

"How To Make Money"—That's Drawing Card for RACCA 12th Annual Convention

WITH a subject of unquestioned interest, "How to Make Money", the 12th annual convention of Refrigeration & Air Conditioning Contractors Association Nov. 17-19 in the Drake Hotel, Chicago, will be highlighted by a pair of open forum panel discussions at which sales and management topics will be aired.

Pre-annual meeting will begin on Sunday, Nov. 17, with RACCA board members convening at 9 a.m. Advance registration will open at 8:30 a.m.

Reception and cocktail party is scheduled for 5:30 p.m., with the Chicago RACCA group as host. This affair is open to non-members and guests as well as to all RACCA registrants.

The annual business meeting will begin at 9 a.m. on Monday, Nov. 18, in the west end of the hotel's Gold Coast room. Dudley M. Cawthon, immediate past president, will preside.

RACCA president William D. Moody's annual mes-

sage will formally open the session. W. L. Long, president of the Chicago RACCA association and general chairman of the convention, will then preview the annual meeting program.

First open forum panel discussion will have Chicago RACCA members as participants, with Long as moderator. Based on the "How to Make Money" theme, topics will cover such sales subjects as fallacies of price cutting, development of sales engineers, compensation of salesmen, selling for profit, and good management practices.

At the noon luncheon meeting, the featured speaker will be Peter T. Schoemann, general president of the United Association, who will discuss "Labor-Management Relations". Reports of treasurer Harvey W. Hottel and nominating committee chairman George T. Howe will precede election of directors for the coming year.

Continued on page 142

Dealers, Distributors, Manufacturers To Join in Discussions Staged by NWAHACA

DEALERS, distributors and manufacturers will be talking "with" each other, not "at" each other, in the new approach the National Warm Air Heating & Air Conditioning Association is taking for its 44th annual convention. The meetings are set for Thursday and Friday, Nov. 21 and 22, in the Morrison Hotel, Chicago. All sessions will be held in the Terrace Casino.

Unusual in this year's program is that two or three speakers, instead of one, will combine to handle most discussion topics—and they'll be from different segments of the industry.

F. L. Meyer, of Meyer Furnace Co., NWAHACA president, will open the Nov. 21 session with "Let's Work Together". "It's Your Market" will then be presented by a panel of three: E. C. Carter, Snips Maga-

zine; John R. Reock, American Artisan; and E. A. Scott, Jr., Heating & Air Conditioning Contractor.

"Group Advertising is Profitable", featuring case histories in which it really was, will be discussed by Walter Marth, G. F. Marth & Son, Milwaukee; F. E. Mehrings, Heating & Air Conditioning Supply, Peoria, Ill.; and J. F. Deane, Tuck-Air Furnace Co., San Francisco.

Another case history of successful advertising, "The Terre Haute Story", will be presented by Walter Stevenson, Hoosier Heating & Sheet Metal, Terre Haute, Ind., and F. J. Nunlist, executive vice president, Mueller Climatrol, Milwaukee.

Speaker at the Nov. 21 luncheon session will be U. S. Senator Frank J. Lausche of Ohio.

Continued on page 144

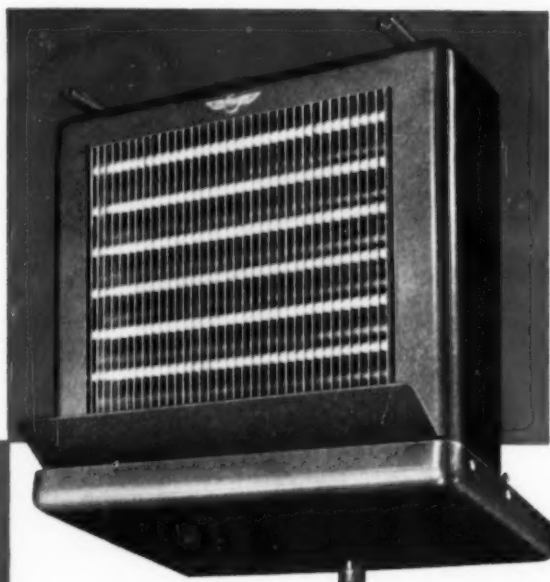
SEE IT IN BOOTH 405 AT THE ARI SHOW

LARKIN

LOW TEMPERATURE

HUMI-TEMP

WITH
FROST-O-TROL
AUTOMATIC HOT GAS DEFROSTER



Thousands of installations the world over have proved the reliability and economy of the Larkin Low Temperature Humi-Temp with Frost-O-Trol Automatic Hot Gas Defroster.

The performance is high! The price is low! The installation is both simple and economical! Run one extra wire and one extra gas line and mount the compact timer. That's all that's necessary.

And the Frost-O-Trol is a honey of an automatic defroster. Defrosts from one to eight times each 24 hours. Takes the toughest jobs in stride—from minus 32°F sharp freeze rooms to 30°F meat storage rooms.

It will pay you to call your wholesaler now for complete information on the Larkin Low Temperature Humi-Temp with Frost-O-Trol Automatic Hot Gas Defroster!

SUCCESS IS BUILT ON THESE FEATURES

- Minimum temperature rise during defrosting
- Adjustable defrosting time and frequency
- No excess heat or moisture load
- Lower operating costs
- Higher efficiency of evaporator unit
- Heat applied throughout entire evaporator
- Melts frost from inside out
- Simple, low-cost installation
- Electrically heated drip pan assures positive drainage of melting ice and water — prevents freezing

COMES COMPLETE

Famous, top-quality
Larkin Low Temperature
Humi-Temp with factory-
installed metering orifice



DEFROST
TIMER



THERMOSTAT



HOT GAS
SOLENOID VALVE



LARKIN
HEAT EXCHANGER



LARKIN COILE

INC.

519 MEMORIAL DRIVE, S.E., ATLANTA, GA. — MURRAY-83171

NEW PRODUCTS

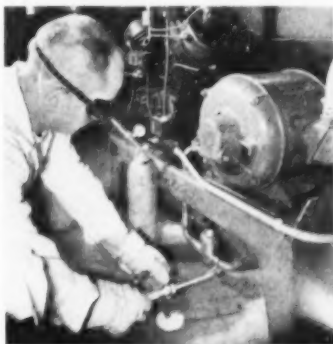
For further information on any of these products, simply circle on the postcard provided in this issue the key numbers of the items in which you are interested. Your request will be forwarded directly to the companies concerned.

(For News of Useful Literature turn to page 114)

Air-Acetylene Torch

Product: "Handi-Heat" soldering torch kit.

Manufacturer: Smith Welding Equipment Corp., Minneapolis, Minn.



Features: Ready to attach to any acetylene tank for immediate operation. For soldering, light brazing, leading, and many other jobs. Tips seat with fingertip pressure and can be adjusted readily to any position convenient to operator. Flexible "O" rings form gas-tight seal between tip mixing section and torch head. Within each tip individual mixer adds correct amount of atmospheric air to acetylene to give desired flame. Wide flame variation range is provided in each tip by leak-proof needle valve which can be adjusted instantly by operator's finger.

Circle No. 171 on Reader Service Card

Packaged Air Conditioner

Product: "Dyna-Pac" packaged air conditioners for commercial and residential use.

Manufacturer: Drayer-Hanson, Div. of National-U.S. Radiator Corp., Los Angeles, Calif.

Features: Equipped with matched coil, condenser, and compressors. Available in 2, 3, and 5-ton ratings. Free blow or duct models. Air or water-cooled. Reciprocating in type, they are externally

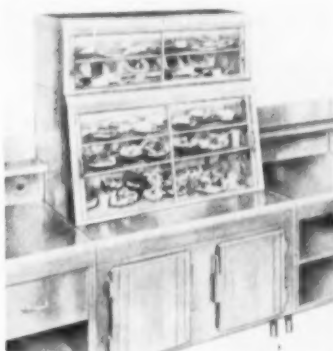
sprung. Four-way air deflection grill and front door permits air discharge in all directions. Provides complete air circulation in built-in plenum. Extra large blowers are rubber-mounted with adjustable drive. Combination condenser receiver is shell-coil construction. Safety relief valve. Baked hammertone enamel finish cabinet houses all-welded angle iron frame construction.

Circle No. 172 on Reader Service Card

Refrigerated Display Case

Product: Refrigerated display case (1844 and 1844A shown) with self-closing doors.

Manufacturer: Bastian-Blessing Co., Chicago, Ill.



Features: 4' refrigerated base. Dry display section at top of 1844A. Operator now may use both hands when removing food from case. Stainless steel; illuminated; and inclined mirror back.

Circle No. 173 on Reader Service Card

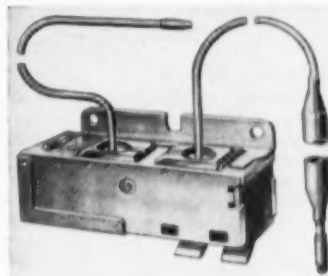
De-Icer Control

Product: Automatic de-icer control (D50, shown and D52) designed to serve as part of control-and-valve system for heat pump operation.

Manufacturer: Ranco, Inc., Columbus, Ohio.

Features: Operation is based upon increases of temperature dif-

ferential between outside ambient air and outside coil temperature when ice blanket is formed on coil as compared to clear coil. Two capillary tubes permit mounting in weather-protected chamber with tubes ex-



tending outside compartment—one in ambient air stream, the other with sensing bulb for attaching to end bend at middle of outside coil. De-icing occurs as sensing bulb and ambient air capillary react to lowered temperature of refrigerant in outside coils and ambient air stream during heating phase. Rocker arm opens switch which stops outside fan and causes slide-type reversing valve to position for transferring heat from unit to outside coil. Ice is removed in three to five minutes. Unit is used for operation with manufacturer's V25 and V26 slide-type reversing valves and C17 cycling control thermostat.

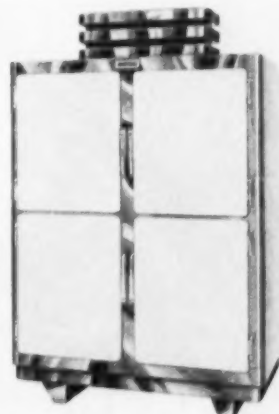
Circle No. 174 on Reader Service Card

Reach-in Refrigerator

Product: Series "MA" line of reach-in refrigerators.

Manufacturer: Koch Refrigerators, Inc., Kansas City, Kans.

Features: Body depth 26". Both four and six-door models. Net capacities are 32 and 50 cu.ft. Completely adjustable, removable, and interchangeable interiors. All-steel



and all-welded construction. Available with solid or glass doors, and in remote or self-contained units. Interiors are practically seamless and

covered for easy corner cleaning. One-piece bottoms are flashed up on all sides. All hardware flush with door surfaces. Optional cantilever pedestal legs give full, under-cabinet support.

Circle No. 175 on Reader Service Card

Ice Cube Maker

Product: "Master", self-contained, redesigned ice cube maker.

Manufacturer: Nor-Lake, Inc., Hudson, Wis.

Features: Makes more ice in addition to storing $2\frac{1}{2}$ times as much as its predecessor. Freezing and storing capacity is 113 trays or



2,394 cubes, for total of 186 lbs. ($5\frac{1}{2}$ bushels) of ice cubes. Stainless steel refrigerated bin and evaporator section are equipped with drains for easy defrosting. "Fiberglass" insula-

tion and 1/3-hp compressor. One-hand operated tray filler and shuck-type trays simplify operation. Sloping face facilitates entry into storage bins. Height $39\frac{5}{8}$ " ; length 47" ; and depth $26\frac{3}{4}$ ". Auxiliary equipment includes portable and stationary ice storage bins.

Circle No. 176 on Reader Service Card

Have you seen the deluxe model of the

"Serviceman"?

See how much we have been able to improve this instrument that was so great from the start:—

Crystal new Polystyrene . . . a lot stronger . . . far more scratch and stain resistant.

Easier to reel up tubing . . . bulb clip (see photo) changed to make reeling handy . . . spiral spring near bulb protects tubing from sharp bending.

"Recalibrator" screw right out in the open . . . on back of case for quick and easy access.

Bourdon tube permanently leak tight . . . you can't see this, but you'll find it out in use. An internal stop protects against excessive pressures.

If your faithful old "Serviceman" has earned retirement, why not replace it with the new 3-scale Deluxe type. Standard single-scale type (see photo) also available.

We'll be there . . .

at the 10th Exposition
of Air Conditioning and
Refrigeration. Booth 201
International Amphitheater
Chicago • Nov. 18-21, 1957

... AND we'll provide
FREE BUS SERVICE to
and from the show at

HOTEL SHERMAN
MORRISON HOTEL
PALMER HOUSE
CONRAD HILTON

Be our guest!

Deluxe 3-scale tests to 40 below
Two added color scales show
Freon —12 and —22 pressures.

Your Jobber Stocks Them

MARSH Refrigeration Instruments

MARSH INSTRUMENT CO. Sales Affiliate of J. P. Marsh Corp.,
Dept. P., Skokie, Ill. Marsh Instrument and Valve Co.
(Canada) Ltd. 2407 128th St. Edmonton, Alberta
Houston Branch Plant: 11211 Routhwell St., Sect. 15, Houston, Texas

GAUGES • WATER REGULATING VALVES • SOLENOID VALVES • HEATING SPECIALTIES

Circle No. 65 on Reader Service Card

3-Way Solenoid Valve

Product: Line of 3-way solenoid valves (Series 500), especially designed for fan-coil unit control.

Manufacturer: Jackes-Evans Mfg. Co., St. Louis, Mo.

Features: Designed for forced circulation control, chilled water air conditioning systems. Incorporates basic principles of pilot-operated diaphragm amplification. Controls water flow either through heat ex-

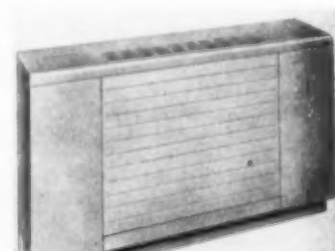


changer of fan coil unit or to by-pass coil. Eliminates pump pressure build-up. Corrosion resistant materials. Low pressure drop requirements. Coil assembly of insulated magnet wire interwound with cotton. Synthetic rubber pilot seat amplifier and valve disc.

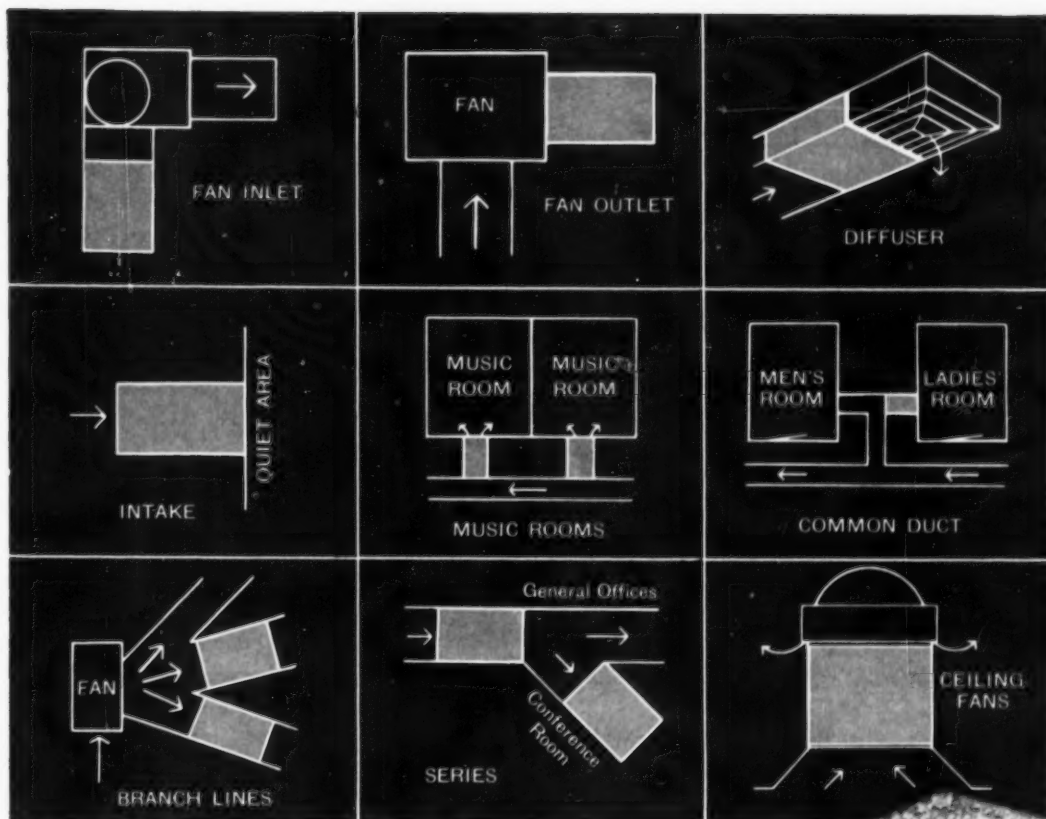
Circle No. 177 on Reader Service Card

Commercial Fan-Coil

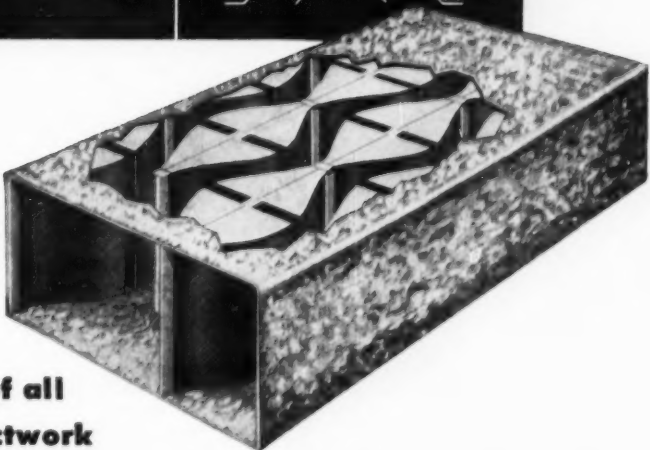
Product: "Capitolaire VER" fan-coil unit designed to provide temperature and humidity control throughout large buildings.



Manufacturer: Heating & Air Conditioning Div., National-U.S. Radiator Corp., Johnstown, Pa.



Every Building Needs *Aircoustat* Sound Traps



AIRCOUSTAT silences all noise of all frequencies traveling through ductwork

Eliminate disturbance, distraction and irritation caused by noises escaping from one area to another through ductwork.

Install AIRCOUSTAT Sound Traps. AIRCOUSTAT eliminates guesswork, wasted space and unnecessary expense of duct lining. You can guarantee your client trouble-free performance. You can estimate with complete confidence the perform-

ance of particular applications. If AIRCOUSTAT fits geometrically, it fits acoustically.

AIRCOUSTAT saves you space. Its greater effectiveness permits smaller-sized ducting. It eliminates bulky mufflers.

For more details, write to KOPPERS COMPANY, INC., Industrial Sound Control Dept., 7711 Scott Street, Baltimore 3, Md.



INDUSTRIAL SOUND CONTROL

Engineered Products Sold with Service

Cut hours of work to minutes ...

... more profit per job
with **NEW**



"Pittsburgh Lock"

HAMMER



MODEL
PLH-1

\$137.50

CONTRACTORS
NET PRICE



The PERFECT TOOL for closing "Pittsburgh Locks"

Speeds up and takes the work out of the only tedious, costly, and time-consuming job of fabricating metal ducts, closing the "seam." On commonly used gauges you can close seams at rate of about 20 feet per minute. Actually saves half a man's time in making ducts and does a much better job.

Arrange with your MILWAUKEE Tool Distributor for a demonstration or write for Bulletin DE 52.

MILWAUKEE ELECTRIC TOOL CORPORATION

5310 WEST STATE STREET • MILWAUKEE 8, WISCONSIN

Circle No. 67 on Reader Service Card

Ends Hand Hammering ... Cuts labor costs ... helps you get more jobs ... make more profit on them.

Versatile ... Handles 30 to 22 gauge (without adjustment). For straight runs, inside or outside radius.

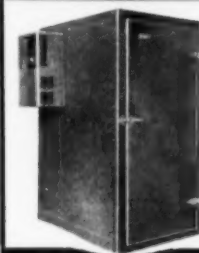
Perfect Balance ... Weight rests on the work ... guides easily along seam.

Powerful ... MILWAUKEE BUILT 115V. AC-DC motor ... more than enough power for any job.

Rugged ... Sturdily built for heavy-duty use ... ball and roller bearings throughout.

Circle No. 68 on Reader Service Card

HANDY, EXTRA REFRIGERATION AT LOW COST THE KOOL'KLOSET



This walk-in, reach-in cabinet is ideal for all 'round storage ... featuring the self-contained refrigeration system, grey baked enamel exterior, 3" spun glass insulation, rugged hardware with inside release, sizes 34" and 62" wide.

LA CROSSE COOLER COMPANY

3002 LOSEY BOULEVARD SOUTH, LA CROSSE, WISCONSIN



WALK-IN COOLERS



BEVERAGE COOLERS



DIRECT COOLERS



CUBE MAKERS



DRAINBOARDS

Export Office—125 Broad Street

New York Cable—Eximport

Speeds Soldering

Self-Cleaning
Non-Acid
No Running



READ THIS: "I have used your Flux-Stik for several years and have found it unsurpassed ... We had a leak at a silver soldered valve joint. By pulling a deep vacuum on the line and the use of this Flux with 95-5 solder, we were able to close the leak in spite of oil and dirt in the joint. Three previous efforts with other flux had failed. It would have been necessary to pump approximately 6 drums of gas from this system to silver solder the valve."

Florida Service Man

Ask your supplier for LA-CO Flux Stick—or write us for sample. For free help on any flux problems write our Engineering Department.



LAKE CHEMICAL CO.

3082 W. Carroll Ave., Chicago 12, Ill.

Circle No. 69 on Reader Service Card

NOVEMBER, 1957 • COMMERCIAL REFRIGERATION

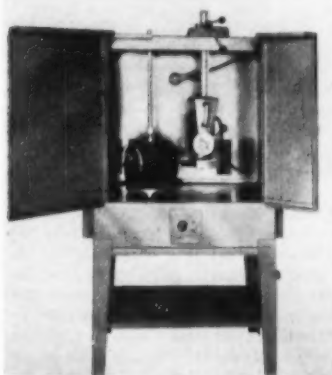
Features: Flexibility of sizes. Built into cabinet of heavy steel and finished with baked-on, two-tone enamel. Only 9½" wide. Even largest console models can be semi-recessed so that only 6" of floor space is used. Adjustable fresh air intake is furnished. Drawer-type filter assures clean air delivery. Three-speed motor control system offers three distinct capacities in each unit and reduces capacity for winter heating without disturbing drafts or constant short-cycling. Thermostatic control is available. Rubber gasket on rear helps overcome uneven wall problems. Eliminates necessity of direct connection with outside air intake.

Circle No. 178 on Reader Service Card

Hermetic Compressor Opener

Product: Hermetic compressor opener that automatically opens any shape compressor up to 20" in diameter regardless of weld position.

Manufacturer: Frankell Mfg. Co., Inc., New York, N. Y.



Features: Will open faulty hermetic compressor in just two minutes, according to manufacturer. Of heavy gauge steel. Two shatterproof windows for full observation. C. E. motors completely enclosed with grease-packed ball bearings, and full length door hinges. All machined parts plated. Requires little or no maintenance. 40 x 24 x 40". Takes 11 amps full load — 115 volts, 60 cycle. Weighs approximately 275 lbs.

Circle No. 179 on Reader Service Card

Diamond Drilling Machine

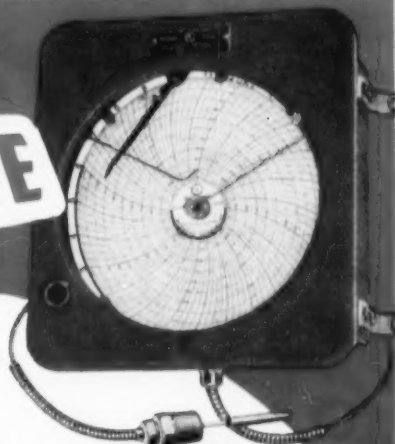
Product: Small, lightweight, diamond drilling machine (Model A).

Manufacturer: Truco Water Swivel Div., Wheel Trueing Co., Detroit, Mich.

Features: Heavy-duty drill motor operates at 1000 rpm. Drills holes 1 to 5" O.D. in all kinds of masonry materials including reinforced concrete. Water swivel supplies water to diamond drill to flush

A NEW Development from AUTO-LITE

INKLESS TEMPERATURE RECORDER!



The newest advance in temperature recording . . . Auto-Lite model 2200 operates completely without ink. It simplifies temperature recording for most processing operations.

- 2 small mercury batteries in case energize transistor oscillator connected to stylus arm.
- Stylus records temperature on 6" evenly calibrated sensitized chart.
- Battery life approximates 2000 hours.
- Records operating temperatures for 24-hour or 7-day cycles.
- Easily serviced — minimum maintenance.

THE ELECTRIC AUTO-LITE COMPANY
INDUSTRIAL THERMOMETER DIVISION
TOLEDO 1, OHIO
NEW YORK • CHICAGO • SARNIA, ONTARIO

Electric or mechanical chart drive available for either 24-hr. or 7-day rotation. In wall mounting, portable and self-contained type cases. Remote reading with capillary tubing. Temperature charts in ranges from -40°F to +550°F. Write for further information.

TEMPERATURE RECORDERS & INDICATORS

WIN A PRIZE! Send your cartoon suggestions on the subject of "Genetron" Super-Dry Refrigerants to: "Genetron" Dept., General Chemical Division, Allied Chemical & Dye Corporation, 40 Rector Street, New York 6, N. Y. WE WILL PAY \$10 for every cartoon idea used and print your name and address.



Do you know that there are less than 2 teaspoons of water in a ton of **genetron**® Super-Dry Refrigerant?

Circle No. 71 on Reader Service Card

away cuttings. May be connected to any faucet or to portable, pressure water tank. Base equipped with rollers on rear edge for easy placement. Column has integral telescopic



screw which permits unit to be anchored to floor by bracing against ceiling for rigidity and for faster drilling and longer bit life. Transverse bar, mounted on swivel bracket on column, swings drilling unit through 360 degrees and can be anchored for drilling in any position. Screw feed gives fast and efficient cutting with light pressure. Circle No. 180 on Reader Service Card

Residential Humidifier

Product: Expanded line of "Aprilaire" humidifiers.

Manufacturer: Research Products Corp., Madison, Wis.



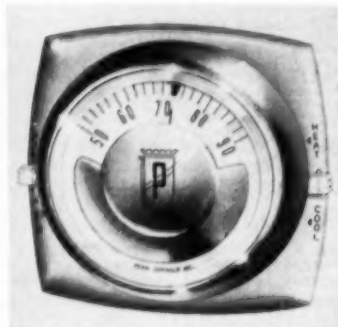
Features: Includes two plenum-mounted models — No. 110 which will evaporate 5.3 lbs. of water per hour, and larger No. 112 which will evaporate 9.2 lbs. of water per hour. Both models are mounted easily on warm air plenum of forced air furnaces. Unit entirely outside furnace, eliminating danger of concealed water damage. Universal Model No. 125 designed for installation where steam or hot water heat is used. Mounts on joists in basement. Has

choice of either independent steam or hot water heat source for water evaporation. Will evaporate as much as 9 lbs. of water per hour. Model No. 135 (shown) is portable unit. Has 4-gal. plastic reservoir. Pushbutton controls. Can be operated at high or low humidification as fan or as heater only. On high humidification, unit will evaporate 4.3 lbs. of water per hour; and on low humidification will evaporate 2.6 lbs. per hour. Circle No. 181 on Reader Service Card

Easy-to-Read Thermostat

Product: "Rimset", thermostat with easy-to-read dial.

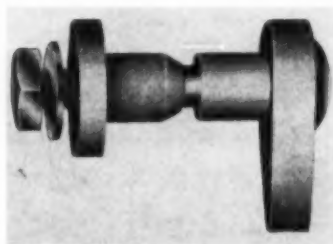
Manufacturer: Penn Controls, Inc., Goshen, Ind.



Features: Available for controlling heating only, cooling only, or both heating and cooling. All heating or cooling variations are made in sub-base, thus allowing stocking of various sub-base assemblies to meet any requirement. Same thermostat is used with any sub-base. Once user chooses thermostat for his particular system, all installer need do is plug thermostat into proper sub-base. Adjustable heat "anticipator" permits accurate temperature control to within 1 F., manufacturer says. Circle No. 182 on Reader Service Card

Terminal Insulator

Product: Nylon terminal insulator designed for hermetically-sealed units.



Manufacturer: Molded Products Div., Watsco, Inc., Hialeah, Fla.

Features: Not affected by oil,

refrigerant, or chemical acids, manufacturer says. Two-piece construction provides impregnable seal between terminal post and housing, as well as reducing assembly time to minimum. Offers very high dielectric factor as well as being stable over temperature range of -40 to 300 F. Can be molded to all specifications. Circle No. 183 on Reader Service Card

Radiation System

Product: Redesigned line of hot water and steam system "Wall-Fin" extended radiation units.



Manufacturer: Trane Co., La-Crosse, Wis.

Features: New element cradles. Streamlined enclosures. Cradle rides freely and quietly on ball bearings. Permits horizontal element expansion without metallic scraping noises. Wall-mounting cabinet bracket supports three cabinet heights. Three styles available with lengths to 1 to 6' in 6" increments. Each is available in 4 or 5 1/4" depth model. Three standard enclosure heights. Damper control. Snap-on front and slip-joint construction for easier installation. Provision for dirt guard gasket full cabinet length. Convactor heating elements are threaded, chamfered, or provided with sweat ends for simple connection to supply and return risers, for series connection with standard fittings, or for piping in parallel tiers. Circle No. 184 on Reader Service Card

Horizontal Furnace

Product: Line of horizontal oil-fired winter air conditioners.

Manufacturer: American-Standard Air Conditioning Div., New York, N. Y.

Features: Designed for instal-



lation where space limitations prevent use of conventional heating equipment. Available in 84,000, 95,000, and 112,000 Btu capacity at

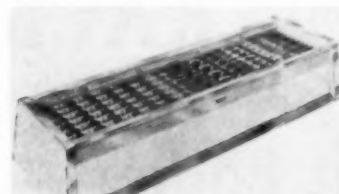
bonnet. Can be mounted in basement; over-head in hallway; suspended under floor in crawl space; or placed in attic. Can be installed to supply either left or right air discharge. Summer cooling may be added when desired.

Circle No. 185 on Reader Service Card

Merchandise Case

Product: Addition to "Stadium" line of two models (8 and 12' units) of deep cold island merchandisers.

Manufacturer: Sherer-Gillett Co., Marshall, Mich.



Features: Only 36" high. Capacity of seven packages to back, nine high, top to bottom. Nubelon S finish for maximum resistance to corrosion, impact, and abrasion, manufacturer says. Extruded, anodized aluminum trim, cart guard and multi-groove price-tag molding. Anti-sweat heater elements and automatic defrost. Available in white, coral, yellow, blue, green, and natural aluminum color bands. Joining kits are furnished.

Circle No. 186 on Reader Service Card

Remote-Type Cooler

Product: Remote-type cooling unit (Model RPT-5) that meets all requirements for built-in water cooler.



Manufacturer: Sunroc Corp., Glen Riddle, Pa.

Features: Measures only 6 3/4" deep. Reduced height of 21 1/2" makes it ideal for built-in-wall location. Has 5 gph capacity. Easily hooks up to any type of wall foun-

tain, water station, and other dispensers. Available with bar-type grille that covers wall opening and permits easy access to cooler. Steel cabinet with adjustable thermostat. Circle No. 187 on Reader Service Card

Refrigerator-Freezer

Product: Combination model (17/7) refrigerator-freezer.

Manufacturer: Jordan Commercial Refrigerator Co., Philadelphia, Pa.

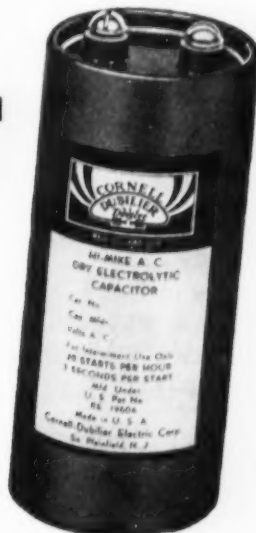
Features: Freezer section approximately 7 cu.ft. Refrigerator section approximately 17 cu.ft. Overall dimensions are 50" long.



68 1/2" high, and 28 1/2" deep including doors and hardware. Operates on 13 1/3-hp hermetically-sealed compressor and one control. Freezer

With motor manufacturers C-D Motor Capacitors are first by far. With motor, refrigerator, air conditioning, oil burner and household appliance maintenance servicemen, C-D capacitors are first choice. You can be sure of C-D's outstanding field performance record and ease of installation. This, plus C-D's great range of types makes it the preferred line among men of experience. That's why Distributors who know, carry the complete Cornell-Dubilier line.

WANT THE
BEST
IN MOTOR
CAPACITORS?
C-D
TO BE SURE!



Always insist on C-D — there's a right type for every motor. Ask your C-D distributor for your free copy of C-D's famous motor capacitor Manual and Catalog No. 163. He's listed in your classified 'phone book. Cornell-Dubilier Electric Corporation, Dept. CR-11, South Plainfield, New Jersey.



CONSISTENTLY DEPENDABLE
CORNELL-DUBILIER CAPACITORS

PLANTS IN SOUTH PLAINFIELD, N. J.; NEW BEDFORD, WORCESTER AND CAMBRIDGE, MASS.; PROVIDENCE AND HOPE VALLEY, R. I.; INDIANAPOLIS, IND.; SANFORD AND PUEY SPRINGS, N. C.; SUBSIDIARY: THE RADIANT CORPORATION, CLEVELAND, O.
THERE ARE MORE C-D CAPACITORS IN USE TODAY THAN ANY OTHER MAKE

Circle No. 72 on Reader Service Card

Milwaukee
SAWZALL
 all-purpose electric hacksaw



Now
 cuts
 wood
 twice
 as
 fast

COMPLETE
 KIT ONLY
\$89.50
 PAYS FOR ITSELF
 QUICKLY

with **NEW genuine SAWZALL Deluxe BLADES** that cut **twice as fast** — last **10 times longer!**

• Using SAWZALL and these new, Deluxe Blades, you can breeze easily thru any thickness of wood, like sheathing, 2 x 4's or heavy joists. You can "plunge-cut" in wood or like materials without a starting hole, cut any shape, saw close, right or left.

For fast roughing-in or scroll cutting, you just can't beat this combination.

Simple Rugged Construction: No complicated mechanisms. Full ball and roller bearings.

Gets in the Tight Spots: Blade straddle-mounted, centered for close sawing right or left.

Powerful: Full 1/2 HP Milwaukee-built motor. Cooler running, won't overload, won't over-heat.

Ideal balance: Weighs only 6 3/4 lbs. Easy one-hand operation.

39 Genuine SAWZALL Blades: A size and type for every sawing need. Deluxe blades for fastest cutting, longest life.

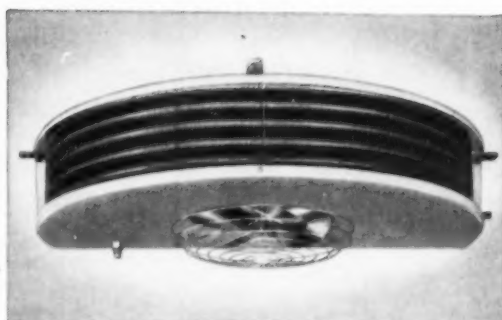
Ask your distributor about SAWZALL and the New Deluxe blades... or write for literature.

MILWAUKEE ELECTRIC TOOL CORP.
 5310 WEST STATE ST. • MILWAUKEE 8, WIS.



SAWZALL complete with sample blade assortment and sturdy, steel carrying case.

Circle No. 73 on Reader Service Card



Sizes ranging from 360 to 1075 BTU.

new from **KRACK**
 semi-circular
 unit cooler

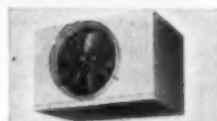
Exclusive circuiting system
 prevents coil "frost-up"

- * Air intake is at the bottom—discharge is through coils in 180° arc.
- * Electrostatic air filter on air intake.
- * Mounts against wall—gives you more usable storage room.
- * Semi-circular discharge provides more even air distribution and circulation in the cooler.
- * Has full size built-in heat exchanger.
- * Easier to install—suction and liquid line can be taken from either side of the unit.
- * Drain pan is hinged for easy access to motor and expansion valve.
- * Permanently lubricated motor with overload protection.

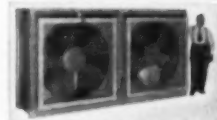
New Bulletin SC-957 gives complete data... write or 'phone today!

See this and other Krack cooling units
 in **BOOTH 401** at the
 Air-Conditioning & Refrigeration Industries 10th Exposition

New "BUC" Series
 moderate price ceiling mount
 unit coolers—265 to 1400 BTU.
 Bulletin BUC-457



KRACK air-cooled condensers
 up to 50 tons.
 Bulletin AC-457



Only Krack's 25 years of engineering and production experience makes such cooling values possible.



REFRIGERATION
 APPLIANCES, INC.

905 W. Lake St.
 Chicago 7, Ill.
 MOnday 6-1141

Circle No. 74 on Reader Service Card
 NOVEMBER, 1957 • COMMERCIAL REFRIGERATION

section closed off from main refrigeration compartment by two insulated polystyrene doors and is equipped with adjustable shelves and polished, natural aluminum walls and floor. Fits into backbar lineups and cafeteria-type kitchens. Available in both white enamel and stainless steel finishes and operates on standard 110-volt current.

Circle No. 188 on Reader Service Card

Winter Conditioner

Product: Three series of warm air furnaces suitable for new or existing homes.

Manufacturer: Thatcher Furnace Co., Garwood, N. J.

Features: 532 series, oil-fired, horizontal units which can be ceiling-suspended or tucked away in crawl space or attic corner. Convenient access door, front flue, and radiator. In four standard models. Easily connect to most types of warm



air heating installations. Can be suspended over main floor area as unit heaters. Gas-fired units (series 554-model shown) especially designed for new construction. Measures 67" high. Only 23" square. Single port up-shot gas burner. Recessed burner compartment for better burner alignment. Optional automatic humidifier to assure proper amount of moisture in air. Vertical, oil-fired furnaces comprise 553 series. Can be used separately for air circulation during warm weather. Burner parts are machined to close tolerances and rotating elements are balanced dynamically.

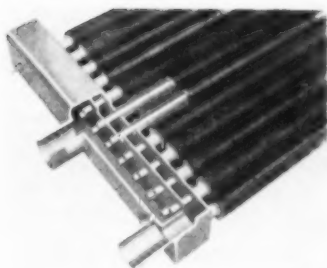
Circle No. 189 on Reader Service Card

Double-Tube Coil

Product: Type D1, 1" O.D., double-tube steam distributing coil unit having supply and return connections at same casing end.

Manufacturer: American Blower Div., American-Standard, Detroit, Mich.

Features: Available with one or two tube rows deep in single section for wide variety of casing sizes,



Inner tube spacer design used for positive centering of inner tube, giving assurance that condensate will

drain rapidly and completely, manufacturer says. Zinc-coated, heavy-gauge steel casings. Available with fins of aluminum or solder-bonded copper. Steel headers with high-temperature-brazed inner and outer tubes. Recommended for steam at 200 psig and 450 F.

Circle No. 190 on Reader Service Card

Low-Pressure Switch

Product: Low-pressure switch to control or signal small pressures, vacuums or differential pressures.

Manufacturer: Bacharach In-

Now that the heat's off
pick up profitable
gasket business with...



FOR REFRIGERATOR AND
FREEZER DOORS

Now's the time to go after those household and commercial gasket jobs you missed during the summer.

Jarrow "Curvall" rubber gaskets are a snap to install as they (1) shape themselves to rounded corners, making notching unnecessary; (2) fit perfectly on the straight sections of the doors, as well.

(Service tip: by carrying all 11 "Curvall" gasket sizes with you at all times you don't have to waste valuable time going back to your wholesaler for the right gasket. You see, these 11 sizes fit practically every late model refrigerator and freezer door on the market).

Ask your wholesaler to show you the "Curvall" display board. You'll see how easily "Curvall" is applied.



Be sure to stop at Jarrow Booth No. 238 at the ARI Show, November 18-21, International Amphitheater, Chicago, Illinois.

Circle No. 75 on Reader Service Card

dustrial Instrument Co., Pittsburgh, Pa.

Features: Independently adjustable automatic reset feature extends use of switch to many automatic control fields. Can be mounted in any position. Operation not affected by vibrations. Requires only



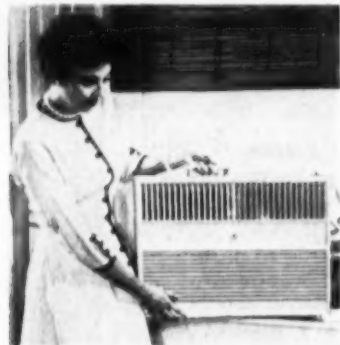
1½" head room. Fits into area of 3½" x 7½". Normal range from .1 to 5" water, but other ranges can be provided. Contacts are adjustable to any point within aforesaid pressure limits. Pressure difference required to actuate contacts may be set as low as .1" water. Contacts may be preset at factory or adjusted in field.

Circle No. 191 on Reader Service Card

Portable Air Conditioner

Product: Multi-use portable air conditioner.

Manufacturer: Carrier Corp., Syracuse, N. Y.



Features: Weighs less than 60 lbs. Only 107½" thick. May be operated as conventional room air conditioner, as heat pump to warm room during intermediate seasons or in mild winter climates, and as dehumidifier. Slide-in wing panels accommodate any standard window. Styled interior and exterior grilles permit unit to be turned around in window, as necessary to cool or heat room. When cooling is desired, one

side of unit faces interior. If heating is necessary heat pump cycle may be used by simply rotating unit, thus reversing grille positions.

Circle No. 192 on Reader Service Card

Electrostatic Air Cleaner

Product: New design of multiple-section electrostatic air cleaner, (Model MS).

Manufacturer: Radex Corp., Chicago, Ill.

Features: Can be made in any multiple of 5½", depending on size of duct space available. For example, electrostatic filters can be made



in size 5½ x 9" up to 28 x 144" — and yet collector plates can be removed for cleaning in space of less than 24". Depth only 18". Height and length can be varied to fit particular need. No water or sewer connections needed. Does not generate ozone. Mechanical filters are connected in multiples and can be withdrawn from unit for cleaning purposes within space of 25". Can be installed horizontally, vertically, or at angle.

Circle No. 193 on Reader Service Card

Pizza Dough Retarder

Product: Self-contained pizza dough retarder.



Manufacturer: S & R Soda Fountain Mfg. Co., New York, N. Y.

Features: Ready to use when plugged in. Top, front face, interior linings and all exposed surfaces are stainless steel, w/1" welded steel

construction. Ingredient shelf, set 10" above working surface, has one large pan and four square pans. Refrigerated section has compartment for storage of cheese and other items. Accommodates as many as seven trays for dough. Unit has adjustable legs.

Circle No. 194 on Reader Service Card

Volume Controller

Product: Constant volume controller (R-316 air flow controller)



for mixing units used on high velocity, high pressure, double duct air conditioning systems.

Manufacturer: Johnson Service Co., Milwaukee, Wis.

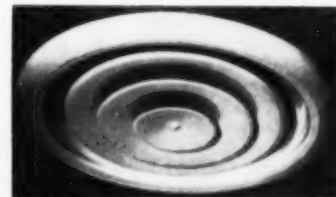
Features: Maintains constant flow pattern within each conditioned space. This is accomplished, manufacturer says, regardless of number of mixing units, length of duct runs, or differences in pressure between hot and cold ducts. Pre-set for desired rate of air delivery. Eliminates job of manual balancing. As power source is taken from filtered and dehumidified control air supply system, problems arising from residual dirt in duct distribution system and dirt contaminated duct air are eliminated. By using control system air power, static pressure of supply system can be maintained at minimum pressure required for air distribution without necessity of maintaining higher pressure for instrument operation.

Circle No. 195 on Reader Service Card

Adjustable Diffuser

Product: "QD" four-cone adjustable diffuser.

Manufacturer: Universal Diffuser Corp., Tuckahoe, N. Y.



Features: Removable core is attached to hollow brass screw connected to installation spider. By rotating lower blade, core can be raised or lowered to change air flow from horizontal pattern through any angle to vertically down. Core is instantly removable by holding one of larger cones and turning it to left. Can be supplied with multi-blade damper directly attached to core. In sizes from 6 to 36".
Circle No. 196 on Reader Service Card

Seal-Cap Valve

Product: "Wolf-Linde" Freon seal-cap valves with screw ends, flanges, and flanged brass connectors.



Manufacturer: Dersch, Gesswein & Neuert, Inc., Chicago, Ill.

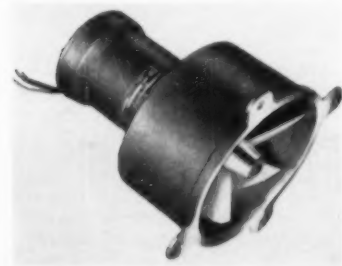
Features: In both glove and angle designs. Extra heavy stems, back seating, and full size ports and passageways. Smaller sizes have threaded bonnets — the larger have bolted bonnets. Available in sizes from 1/2 to 6".
Circle No. 197 on Reader Service Card

Mass Blower

Product: Mass blower designed for use in systems where constant volume of air flow is required at varying altitudes.

Manufacturer: Eastern Industries, Inc., Hamden, Conn.

Features: Uses induction motor and magnetic coupling. Fan speed is



approximately 1/3 of motor speed at sea level. As density of air decreases, reducing air resistance to blades, fan speed increases, approaching relatively constant motor speed. Higher volume is delivered and constant mass flow is maintained, manufacturer says. Coupling consists of permanent magnet with series of poles protruding axially. Poles face washer-shaped follower, with air gap between, attached to fan blade. Magnet rotation induces rotation in follower and fan blade. As drag on fan blade is reduced, due to decreasing air density, speed increases. Power input to motor also is essentially constant since torque

is controlled by magnetic coupling. Fan rotation speed controlled by air density.

Circle No. 198 on Reader Service Card

Combination Vacuum Pump

Product: Line of combination, two-stage vacuum pumps for both dry and wet systems.

Manufacturer: Beach-Russ Co., New York, N. Y.

Features: Rated capacities from 28 to 880 cfm. Made as one integral unit, consisting of high vacuum stage and fore or backer stage. Powered by single motor. High vacuum

LEHIGH **BLU-COLD** CONDENSING UNITS

lead in

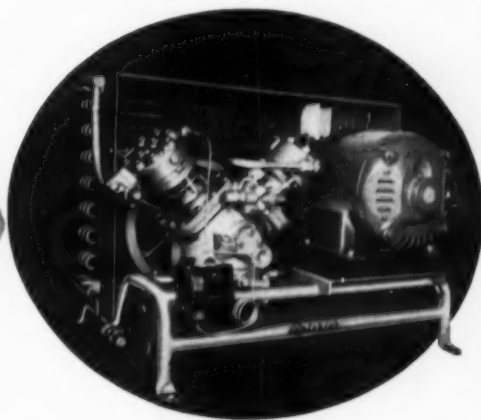
ADAPT-ability

DEPEND-ability

FLEX-ability

SERVICE-ability

—and their unique tubular air-frame base adds complete ACCESS-ability!



where "ability" counts,
specify Lehigh



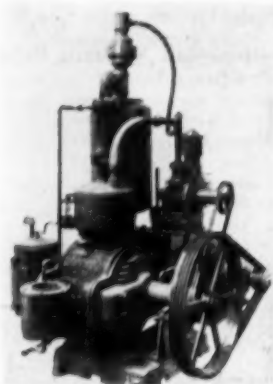
Lehigh MANUFACTURING CO.

DIVISION OF LEHIGH, INC. • Plant: Lancaster, Pa.
Export Dept.: 13 East 40th Street, New York, New York

write now . . . for important informative catalog

Circle No. 76 on Reader Service Card

stage has its own lubrication supply, which always is under vacuum, remaining uncontaminated and completely degassed at all times,



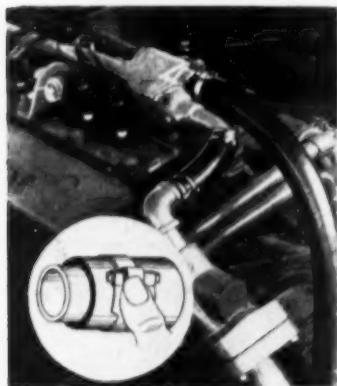
manufacturers says. This stage exhausts at low enough pressure to prevent vapor condensation. Pump-down from atmospheric pressure is automatic.

Circle No. 199 on Reader Service Card

Universal Clamp

Product: 18-8 stainless steel, universal clamp. Designed for application to plastic, neoprene, and rubber hose or tubing.

Manufacturer: Uni-Clamp, Inc., Glendale, Calif.



Features: In flat form ready for simple application for all diameters and contours from $\frac{5}{8}$ " to 7". Installed by fitting around hose, hooking tongue around flat stainless key, and rolling key over with finger pressure only. No tools are required to install to maximum desired tension. Clamp pressure on hose is equal all around diameter.

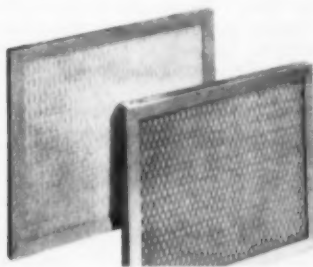
Circle No. 200 on Reader Service Card

Plastic Air Filter

Product: Permanent, washable air filter ("Skuttle-Aire") of plastic filtering material.

Manufacturer: Skuttle Mfg. Co., Milford, Mich.

Features: Filtering material has built-in electrostatic properties, and minimum air resistance, manufacturer says. Available in $\frac{1}{2}$ " and 1" thicknesses. 10 standard 1" sizes, ranging from 6 x 20" to 14 $\frac{5}{8}$ " x 23 $\frac{1}{4}$ ". Special sizes are available. Cleans with running water. Encased in riveted aluminum frame. Each



contains four layers of thermoplastic filtering media placed between expanded metal grills. Spring clips furnished free where it's necessary to fill 2" space.

Circle No. 201 on Reader Service Card

Polyurethane Formulations

Product: "Stafoam" polyurethane formulations for spray gun coating of flat or contoured surfaces, fabricated objects, or assemblies.

Manufacturer: American Latex Products Corp., Hawthorne, Calif.

Features: Applied with catalyst spray equipment to clean, wax, or oil-free surfaces. Will foam in place to any desired thickness between $\frac{1}{8}$ " and 2", forming surface bond



stronger than material itself. Available in densities ranging between 2 and 20 lbs. per cu.ft., in rigid forms or in nonspray formulations.

Circle No. 202 on Reader Service Card

Solvent Vapor Degreaser

Product: Model No. 10 solvent vapor degreaser.

Manufacturer: Tect, Inc., Dumont, N. J.

Features: Of 14-gauge steel with heavy zinc coating. Stainless steel coil maintains vapors at proper

level. Work rest and lightweight, galvanized steel basket also are provided. Includes inlet and outlet hoses for quick connection of condenser



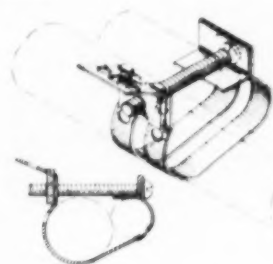
to tap water supply. Will clean minimum of 100 lbs. of steel per hour, according to manufacturer. Only 1 $\frac{1}{2}$ gallons of solvent required for operation. Inside diameter 14 $\frac{1}{2}$ " and vapor cleaning height 10 $\frac{1}{2}$ ". Available on trial basis.

Circle No. 203 on Reader Service Card

Valve Bulb Clamp

Product: Rust-proof valve bulb clamp.

Manufacturer: Commercial Machine & Welding Co., Dover, Ohio.



Features: Easy to install and adjust. Eliminates fumbling around in hard-to-get-at areas. Three-piece clamp adjusts to various sizes of suction lines and valve bulbs. Eliminates use of two bolts, two nuts, and two straps.

Circle No. 204 on Reader Service Card

Protective Coating

Product: Protective coating ("Koldrok") for low-temperature insulating materials in refrigerated and cold storage rooms.

Manufacturer: Selby, Battersby & Co., Philadelphia.

Features: Applied over such insulating materials as cork, "Styrofoam", "Rubatex", brick, concrete, and glass-base insulation, formula-



The most complete line of

EVAPORATIVE CONDENSERS

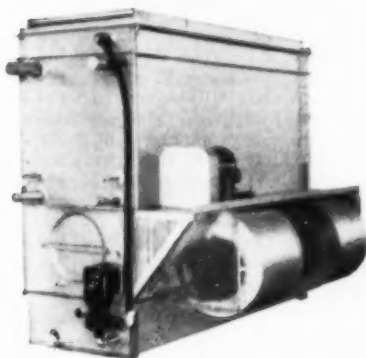
(Illustrated)

10 to 350 TONS

FACTORY-ASSEMBLED COOLING TOWERS

(of similar design)

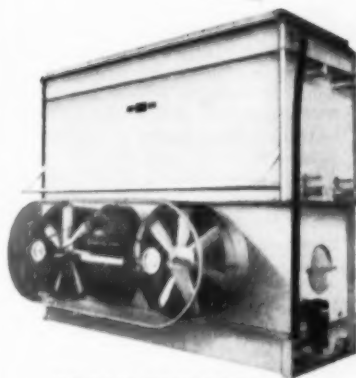
10 to 400 TONS



**BLOW-THROUGH
Centrifugal Type**



**DRAW-THROUGH
Centrifugal Type**



**BLOW-THROUGH
Propeller Type**

- All Hot-Dipped Galvanized Construction
- Quiet Operating (Centrifugal Fan Units)
- Low Horsepower (Propeller Fan Units)
- Condensers—Full Weight Steel Pipe Coils
- Towers—Non-Warping, Fireproof Galvanized Wet Deck Surface

ALSO: INDUSTRIAL TOWERS to 1200 GPM
For Critical Applications—Any Approach, Any Range

**BOOTH 648-50
ARI SHOW
CHICAGO**

BALTIMORE AIRCOIL COMPANY, INC.

BOX 7322, BALTIMORE 27, MARYLAND

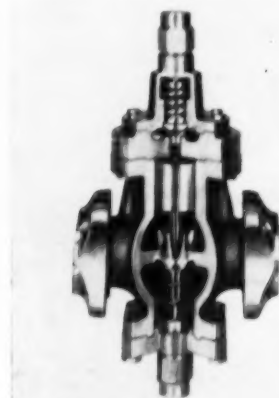
tion provides smooth, rock-hard surface for protection against damage, manufacturer says, also fire-proof. All-mineral compound said to withstand temperatures from -50 F to 150 F without cracking. In wide range of standard colors.

Circle No. 205 on Reader Service Card

Evaporator Regulator

Product: Port size series (2½") back pressure regulators.

Manufacturer: Refrigerating Specialties Co., Chicago, Ill.



Features: Modulating V-port seat provides precision evaporator control. Eliminates chatter under light loads, manufacturer says. Ideal for close regulation of chillers, flooded or direct expansion evaporators, or for hot gas defrosting pressure control. Available with optional features such as electrically compensated, pneumatically compensated, holdback, dual and electric stop. For all sizes from ¾ to 6" port for Refrigerants 12, 22, and ammonia.

Circle No. 206 on Reader Service Card

Package Chiller

Product: Air-cooled packaged water chiller ("ARPC") designed primarily for residential air conditioning applications.



Manufacturer: Heat-X, Inc., Brewster, N. Y.

Features: Complete with 2, 3, or 5-hp compressor, "Inner-Fin" air-cooled condenser and water chiller,

superheater heat interchanger, and necessary controls. Cabinet finished with weather-resistant blue aluminum paint. Suitable for installation either indoors or outdoors.

Circle No. 207 on Reader Service Card

Pressure-Sealed Driers

Product: Line of "Abso-Dry" pressure-sealed driers and filter-driers.

Manufacturer: Henry Valve Co., Melrose Park, Ill.

Features: To obtain maximum drying efficiency, each drier is re-activated thoroughly, manufacturer says, and by exclusive process positive indication is provided, by pressure sealing, that unit is tight, dry, and factory-fresh. When end connection seal of drier is loosened prior to installation, hissing sound takes place because of the escape of dehydrated air.

Circle No. 208 on Reader Service Card

Tempering Valve

Product: Two tempering valves with ½" sweat connections: No. 507 with concealed adjustment which requires use of screwdriver to change. No. 508 (shown) with convenient external adjusting handle.



Manufacturer: Taco Heaters, Inc., Cranston, R. I.

Features: Both have adjustment range from 120 to 160 F. Forged bronze body and cap. Compact size. Introduces cold water only when hot water source is above setting. Hermetically-sealed thermal element easily replaced without disturbing any pipe connections.

Circle No. 209 on Reader Service Card

Horizontal Cooling Tower

Product: Line of 18 packaged, horizontal induced draft cooling towers.

Manufacturer: Dover Mfg. Co., Independence, Mo.

Features: Hot-dip galvanized before fabrication. Redwood fill. Manufacturer guarantees each tower's rated thermal capacity. Propeller and drive shaft are stainless steel. Basin is one-piece unit. Available in sizes from two to 100 tons.

Circle No. 210 on Reader Service Card

Cast Iron Oil Boiler

Product: Packaged cast iron oil boiler — completely assembled and ready to install.



Manufacturer: Richmond Plumbing Fixtures Div., Rheem Mfg. Co., Metuchen, N. J.

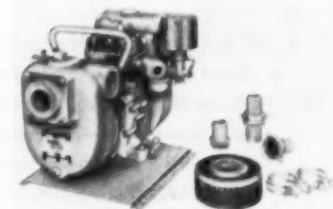
Features: Oil burner mounted and completely wired. Flange-mounted in top side portion of front boiler section. Attached to cast iron plate is series of integral-finned copper tubes for quick heat absorption. Available in 445, 610, and 765 sq. ft. water (net) capacities. Extended jacket is optional. Green finish.

Circle No. 211 on Reader Service Card

Portable Pump

Product: Self-priming, portable "Contractors Pump".

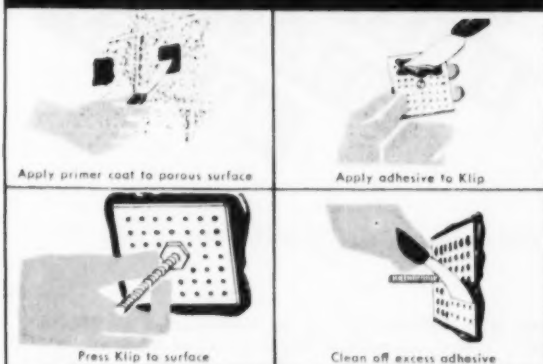
Manufacturer: Lancaster Pump & Mfg. Co., Inc., Lancaster, Pa.



Features: Four volute cut-off design yields extra high capacities in high pressure range without overloading 2-hp, 4-cycle gas engine. Grease-lubricated seal. Built-in check valve. Steel base, carrying handle, and strainer.

Circle No. 212 on Reader Service Card

5-SECOND APPLICATION!



WITH *Stic-Klip*® INSULATION ANCHORS and FASTENERS

Stic-Klip® feature no time consuming costly surface drilling, no fire hazard, fast, money-saving application and a strong positive bond.

Can't be beat for attaching insulation, strapping, metal lath, wall fixtures, wiring and conduit to curved or flat metal or masonry surfaces.

There's a *STIC-KLIP*® for every application. Write for information and illustrated catalog.

***Stic-Klip*® MANUFACTURING CO.**
54 Regent St. Cambridge 40 Mass.

A MUST FOR AIR CONDITIONER INSTALLATION AND SERVICING



Here's the first performance-proven, practical and economical, portable processing Vacuum Pump that really eases installation and servicing of refrigeration equipment. This new tool eliminates the use of refrigerator compressor to evacuate systems and connecting tubing.

Removes air, freon, non-condensibles, and with a freon sweep removes moisture without contaminating vacuum pump oil or reducing evacuating efficiency.

Will most effectively evacuate a fully charged system without prior purging.



- Low Cost
- Efficient
- Serviceable
- Light Weight
- Compact
- Portable
- Tested
- Fully Warranted

Write for
catalog
sheet and
details

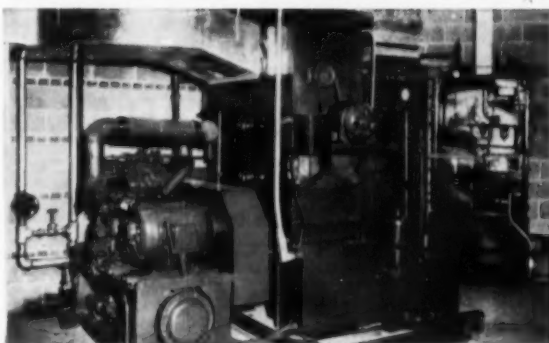
Sedco
INC.

2460 South Main Street
Adrian, Michigan

Circle No. 80 on Reader Service Card

& AIR CONDITIONING • NOVEMBER, 1957

DRY AIR... PRECISELY as you want it



NIAGARA CONTROLLED HUMIDITY AIR CONDITIONING

This method removes moisture from air by contact with a liquid in a small spray chamber. The liquid spray contact temperature and the absorbent concentration, factors that are easily and positively controlled, determine exactly the amount of moisture remaining in the leaving air. Heating or cooling is done as a separate function.

The Niagara's Controlled Humidity Method using HYGROL moisture-absorbent liquid is

Best and most effective because... it removes moisture as a separate function from cooling or heating and so gives a precise result constantly and always.

Most reliable because... the absorbent is continuously reconstituted automatically. No moisture-sensitive instruments are required to control your conditions.

Most flexible because... you can obtain any condition at will and hold it as long as you wish in either continuous production, testing or storage.

Easiest to take care of because... the apparatus is simple, parts are accessible, controls are trustworthy.

AT THE CHEMICAL SHOW

26th EXPOSITION OF CHEMICAL INDUSTRIES
Coliseum, New York City, December 2-6, 1957

See NIAGARA...
AIR CONDITIONERS • Aero HEAT EXCHANGERS
Aero AFTER COOLERS • Aero REFRIGERANT
CONDENSERS • Aero STEAM CONDENSERS
Aero VAPOR CONDENSERS • HUMIDIFIERS
HEATERS • COOLERS • DRYERS
BOOTH No. 455

The cleanest because... no solids, salts or solutions of solids are used and there are no corrosive or reactive substances.

Write for full information; ask for Bulletins
112 and 121. Address Dept. CR-11


NIAGARA BLOWER COMPANY

405 Lexington Ave., New York 17, N. Y.

District Engineers in Principal Cities of U.S. and Canada

Circle No. 78 on Reader Service Card

**NEW!!
TERRIFIC!!
FAITHFUL!!**




AURORA®
General Purpose
**CLOSE-COUPLED
CENTRIFUGAL PUMPS**

Get acquainted with this new series of versatile, economical and brilliant performers. Compactness, simplicity of design and long life suit these pumps perfectly to a wide range of duties including hot water and chemicals handling—with low NPSH characteristics to meet critical suction conditions.



**TYPE BJF
FLANGE MOUNTED**

IDEAL for THESE DUTIES

**AIR CONDITIONING
REFRIGERATION
COOLANT
HOT WATER
CHEMICAL*
GENERAL PURPOSE**

*MAY BE FURNISHED IN SPECIAL ALLOYS TO MEET SPECIFIC CONDITIONS

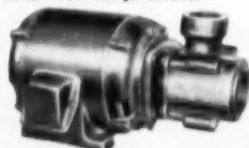
**A FEW OF
MANY VALUE FEATURES**

SEALS or GLANDS—Available in either as desired.
SPEEDS—3,500, 1,750 (60 cycle) and 2,880, 1,440 (50 cycle) speeds.
CURRENT—AC or DC—All voltages and phases.
MOTORS— $\frac{1}{8}$ to $7\frac{1}{2}$ H.P. drip-proof, splash-proof, totally enclosed, explosion-proof and chemical. Quiet, efficient NEMA standard.
COMPACT—QUIET—ECONOMICAL.



**TYPE BJV
BASE MOUNTED**

Write for BULLETIN 119 for complete description of AURORA Quality construction and design details.



TYPE BJH HORIZONTAL

CONSULT with US

Aurora engineers will appreciate specifications of your difficult jobs. Only the RIGHT Pump does the job RIGHT.

**Your Inquiries Will Receive Prompt Attention
DISTRIBUTORS IN PRINCIPAL CITIES**

AURORA PUMP DIVISION
THE NEW YORK AIR BRAKE COMPANY

21 LOUCKS STREET • AURORA • ILLINOIS
EXPORT DEPARTMENT — Aurora, Illinois — Cable Address "NYABINT"

PUMPS
"by Aurora"
**for EVERY NEED
in INDUSTRY**
for
**WATER SUPPLY
CONDENSATE
BOILER FEED
PROCESSING
BOOSTER
TRANSFER
ETC., ETC.**
**Ask for
CONDENSED
CATALOG "M"**

useful
**BULLETINS
BOOKLETS
CATALOGS**

(For News of New Products turn to page 99)

NEW D50 AUTOMATIC de-icer is introduced in 20-page booklet covering valves and controls produced by Ranco, Inc., Columbus, Ohio. The unit is described as the only control which operates solely on the accumulation of ice on outside coils and which quickly and completely removes ice and automatically returns the heat pump to the heating phase in three to five minutes. The V25 and V26 slide-type reversing valves also are new products covered.

Circle No. 137 on Reader Service Card

PERFORMANCE CURVES are depicted in 16-page Catalog No. 757 which evaluates rotary positive air and vacuum pumps, gas boosters, and air motors made by Leiman Bros., Inc., Newark, N. J. Included are two and four-wing types; fan-cooled, water-cooled, and new radiator air-cooled models; motor-driven units; direct-coupled and belt-driven models; integral pump and motor; automatically controlled tank units; and a complete line of accessories.

Circle No. 138 on Reader Service Card

COMMERCIAL DISPLAY refrigeration is the subject of 52-page catalog produced by Frigid Igloo Mfg. Corp., Yonkers, N. Y. Divided in three sections, first part contains illustrations, specifications, and dimensional drawings on dairy and beverage wall cases. Second section features full-vision, counter-high, single and double-duty cases. Last section dramatizes bakery display cases, high and low-temperature display equipment, including wall display, reach-ins, and baked goods freezers.

Circle No. 139 on Reader Service Card

LATEST LINE of propeller fan evaporative condensers, from 75 to 350 tons, is described in four-page Bulletin 105 from Baltimore Aircoil Co., Baltimore, Md. Blow-through propeller fan arrangement, recommended for applications where minimum horsepower is essential, is discussed. Construction details and complete dimensional data also are included.

Circle No. 140 on Reader Service Card

SIX SECTIONS comprise solenoid valve Catalog 30-10 now available from Sporlan Valve Co., St. Louis. Printed in two colors, publication is bound attractively and punched so it may be used as separate catalog or filed as section of firm's general sales manual. Separate sections deal with general information, capacities, specifications, installation and service, special applications, and solenoid pilot control.

Circle No. 141 on Reader Service Card

APPLICATION OF COMBINATION air conditioning and air distribution control is analyzed in four-page booklet (F-8326) prepared by Barber-Colman Co., Rockford, Ill. Written in non-technical language, it explains and illustrates correct application of electronic controls and "Uni-Flo" distribution products.

Circle No. 142 on Reader Service Card

Circle No. 81 on Reader Service Card

INFORMATION ABOUT dimensions, weights, and connection sizes is illustrated graphically in Bulletin No. C-1100-S144 P released by Worthington Corp., Harrison, N. J., concerning its packaged water chiller for residential, commercial, and industrial application. Specification sheet in color outlines features and gives example of typical application.

Circle No. 143 on Reader Service Card

FRACTIONAL HORSEPOWER V-drives and drive parts and accessories are analyzed in 46-page publication (Form F-10) produced by Maurey Mfg. Corp., Chicago, Ill. Included are interesting action pictures, information on interchangeable bushings, and engineering data section.

Circle No. 144 on Reader Service Card

CUTAWAY DIAGRAMS of system components are included in 32-page brochure by Industrial Div., York Corp., York, Pa., describing its single-stage, (Freon-11) turbo-water cooling systems in capacities of 115-350 tons. Profusely illustrated, three-color brochure contains charts of dimensions and weights of various systems, and 12 pages, of simplified selection tables with typical rated capacities.

Circle No. 145 on Reader Service Card

CONSTRUCTION AND OPERATION of a completely mechanical instrument that measures heat in thermal units and liquid-flow in gallons with high precision are described fully in Bulletin 1000 by Air Conditioning Equipment Corp., New York, N.Y. Known as the Pollux Btu integrating meter, its pressure and temperature ranges also are discussed. Selection data is included.

Circle No. 146 on Reader Service Card

SEVERAL DIFFERENT METHODS of operating air-cooled condensers at low ambient temperatures and advantages of each are presented in Bulletin AC-101 by Halstead & Mitchell, Pittsburgh, Pa. Dimensions, weights, coil and fan data, and capacity at the evaporator in Btu/h are given. Ratings are shown at entering air temperatures of 80, 90, 95, and 100 degrees with condensing temperatures from 100 through 120 degrees; and for suction temperatures of 40, 20, 0, and -20 F.

Circle No. 147 on Reader Service Card

MODERN METHOD of switching lighting and appliance loads in residential, commercial, and industrial installations with low-voltage control is explained in comprehensive, 12-page manual by Square D Co., Detroit. Manual discusses flexibility, safety, and versatility of this system and points out its advantages over conventional switching systems.

Circle No. 148 on Reader Service Card

FUNDAMENTAL PRINCIPLES of heating and air conditioning are interpreted in an interesting, easy-to-read manner in attractively designed booklet by National-U.S. Radiator Corp., Johnstown, Pa. Designed to explain to homeowners a system's basic points, it is titled "Heating and Air Conditioning with Water for Year-round Comfortable Living". Should be helpful to dealer in assisting him in moving better quality equipment in less time and with less frequent servicing.

Circle No. 149 on Reader Service Card

A PATENTED SYSTEM guaranteed to end air trouble in hot water heating plants is discussed in Bulletin No. HM-456-A available from Bell & Gossett Co., Morton Grove, Ill. The system, "Airtrol" (R) is available for all boilers and compression tanks regardless of size. Illustrations and operating instructions are included.

Circle No. 150 on Reader Service Card

(More Useful Literature on page 116)

you want 'em? we got 'em!

28 FULL LINES!

d-h AIR CONDITIONING

SPOTTAIRE ROOM-by-ROOM AIR CONDITIONERS: #1 d-h LRC's: basic unit, concealed or deluxe cabinet; 4 models, 200 thru 600 cfm. #2 d-h VRC's: concealed or deluxe consoles; 3 models, 200 thru 600 cfm. #3 d-h HRC's: 3 suspended types, 19 models, 300 thru 1750 cfm.

AIR HANDLING UNITS: #4 d-h HH Series: ceiling suspended. #5 d-h HHV Series: floor mounted. Both: 14 models, 624 thru 28000 cfm.

VENTILATING UNITS: #6 d-h AM: 1752 thru 32250 cfm. **MULTIZONE TYPES:** #7 d-h FLEXAZONE: for simultaneous, independent, variable heating, cooling, ventilating; 1752 thru 32250 cfm.

PACKAGED AIR CONDITIONERS: #8 d-h AEER: with built-in evaporative condenser. #9 d-h SCR: with water-cooled condenser. Both, 7½ thru 75 H.P.

PACKAGED STORE COOLERS: #10 d-h DYNA-PAC & ROYALAIR: 2 thru 15 tons.

PACKAGED WATER CHILLERS: #11 d-h CWG: 7½ thru 75 H.P. #12 d-h CWG-E: attached evaporative condenser. Both 7½ thru 75 H.P.

EVAPORATIVE CONDENSERS: #13 d-h PERMA-FAN: 13 models; 5 thru 110 tons.

COILS: #14 Extended surface; steam, water, DX. #15 Type "H": small applications, DX or chilled water.

PACKAGED WATER CHILLERS: #16 d-h AC: air cooled. #17 d-h WC: water cooled. Both, 2, 3, 5 H.P.

COOLING TOWERS: #18 d-h WMT: 13 models, 5 thru 100 tons.

AIR COOLED CONDENSERS: #19 d-h ACC: 5 models, 2 thru 20 tons.

d-h COMMERCIAL REFRIGERATION:

UNIT COOLERS: #20 d-h FLOCOLD UNIT COOLERS: over 34° F; 11 models; 750 thru 6000 cfm. #21 d-h FLOCOLD: under 34° F; water defrost, 7 models, 750 thru 6000 cfm. #22 d-h FLOCOLD: over and under 34° F; water defrost ammonia, 4 models, 2000 thru 6000 cfm. #23 d-h SPASAVAR: WALK-IN BOXES: over 34° F; 7 models, 730 thru 4400 cfm. #24 d-h HOT SHOT: AUTOMATIC ELECTRIC DEFROST: under 34° F; 8 models, 700 thru 3700 cfm. #25 d-h HRC: MEAT CUTTING & PACKAGING ROOM UNITS: 14 models, 500 thru 1750 cfm. #26 d-h FLOCOLD HOT PAN; LIQUOR/MEAT WALK-IN: 8 models, 750 thru 6000 cfm.

PRODUCT COOLERS: #27 d-h FLOCOLD (FT & CT; FTWD & CTWD; FTAF & CTAF): 9 models; 1314 to 37325 cfm.

REPLACEMENT HOUSING: #28 d-h SPASAVAR: 8K to 10K models; 750 thru 6000 cfm.

Want literature? Request by number: #1 thru #28

NAME _____

ADDRESS _____



drayer-hanson
DIVISION OF NATIONAL U.S. RADIATOR CORP.

3301 MEDFORD STREET
LOS ANGELES 63, CALIFORNIA
CABLE: FORTRAD LOS ANGELES

Circle No. 82 on Reader Service Card

**WHY PAGE
THE FLOOR?
STOP AT
BOOTH**

700

TEMPRITE PRODUCTS CORP.

**International Amphitheatre
Chicago**

**BIG SURPRISES IN STORE AT
TEMPRITE
BIRMINGHAM MICHIGAN**

Get set for '58 with Temprite! Stop at Booth 504 and feast your eyes on the really **BIG SURPRISES** packages of the snow!

10th Exposition International Amphitheatre Chicago November 18th-21st

Circle No. 83 on Reader Service Card

USEFUL LITERATURE...

Continued from page 115

DISCUSSION OF MOTORS is carried in two publications by Allis-Chalmers Mfg. Co., Milwaukee, Wis. Formerly depicted in two, colored, sound-slide films, stories now are told in Bulletin 51X8581, "How to Take Step Seven"; and Bulletin 51X8582, "How to Make a Motor Go... and Go, Go, and Go".

Circle No. 151 on Reader Service Card

STOCK SIZES are listed in Bulletin SD 311 available from Acme Electric Corp., Cuba, N. Y., on its step-down transformers. Complete specifications and dimensions are listed in this two-color publication.

Circle No. 152 on Reader Service Card

HELPFUL TIPS to planner and installer groups are offered in Catalog EMS-5715EC by Drayer-Hanson, Div. of National-U.S. Radiator Corp., Los Angeles, on its AECR line of packaged, water-cooled air conditioners. General specifications are presented and chart form shows blower data for conditioner and condenser section.

Circle No. 153 on Reader Service Card

DESCRIPTIONS AND PICTURES of display coolers for food, beverage, or dairy products are supplied in catalog sheet (Form MC-14) released by Nor-Lake, Inc., Hudson, Wis. Literature depicts installation ease of these all-metal coolers.

Circle No. 154 on Reader Service Card



Going to the

10th Exposition

Air Conditioning

and Refrigeration Industry?

Be sure to meet us at booth 718



EVANS MANUFACTURING CORP.
COMMERCIAL AND INDUSTRIAL REFRIGERATION FIXTURES
MOUNT VERNON, N. Y.

Circle No. 116 on Reader Service Card
NOVEMBER, 1957 • COMMERCIAL REFRIGERATION

New Jamison FROST has Adjustable Temperature Control

to prevent icing and freezing shut of cold storage doors



The new Jamison Frostop with adjustable temperature control is now available on Jamison Cold Storage Doors of many types and practically all sizes.

...thermoswitch-controlled temperature range eliminates dangers of overheating or condensation of moisture due to unauthorized shut off.



120°—above 120° excessive temperature damages frame and gaskets.

60°—below 60° condensation will form in cable channels on frame and sill areas.

Adjustable Frostop thermostatic switch permits selection of any temperature between 60° and 120°.

BUILT IN SAFETY RANGE

With the new Jamison Thermoswitch Control, Frostop *cannot* be turned off at the unit, nor can heat be elevated beyond safe limits. Practical temperature range is from 60°F. to 120°F., which prevents moisture condensation or excessive heat.

Other approved features include Gasketed Control Box—water tight and drip proof; and Silicone-Glass Cable Insulation to give cable moisture and heat resistance and extra long life.

Specify Jamison's new Frostop for completely safe control of icing and freezing of doors. Write for new Frostop Bulletin. Jamison Cold Storage Door Co., Hagerstown, Md., U.S.A.

More JAMISON Doors are used by more people than any other Cold Storage Door in the world.

JAMISON

COLD STORAGE DOORS

Circle No. 84 on Reader Service Card

TURN TO RE-HEAT...

Continued from page 77

trash chute presented a problem. There appeared to be no practical way to carry connecting pipes through intervening offices and their separating walls.

The solution: Holes were drilled through the back wall of the building close to the trash chute and beneath the fire escape windows, and connecting piping was carried along the outer building wall on supporting hangers.

Concerning the permanent, re-heat system installation, the company's special services superintendent reports that it meets requirements in every respect, although operating costs are slightly higher than those of a standard system performing equal work.

This moderately-increased operating cost may be compensated for by better control, air being brought to temperature at the room, rather than in a distant plenum.

On days when smog is thickest, the permanently air conditioned offices are remarkably free of eye irritants.

Pettibone has a theory — so far unconfirmed — about this phenomenon. He believes that moisture condensation on cooling coils in the fan room intake cabinets traps, or neutralizes, a high percentage of smog irritants. Whatever the explanation, the effect is so pronounced that visitors often ask if special "smog filters" are used.

"ONE-PRICE" PLAN NOW FOR "FREON" PRODUCTS

Du Pont's "Freon" Product Div. will institute a "one-price" policy on all of its "Freon" refrigerants, aerosol propellants, and solvents, effective Dec. 26, in a move to help its customers reduce distribution costs to the lowest possible level.

The change means that any particular type of "Freon" compound will be sold at one uniform price schedule, regardless of the end use of the chemical.

In the refrigeration field, it elimi-

nates the current policy of separate pricing of individual "Freon" refrigerants, depending upon whether they are sold to equipment manufacturers for original equipment charge or to the wholesale trade for resale to servicemen and contractors for replacement charges in existing equipment. Price differentials according to container size, of course, will be maintained.

At the same time, the company announced that Ansul Chemical Co., and Virginia Smelting Co., have been named sales agents for "Freon" refrigerants to the wholesale level.

HY EPSTEIN TO HEAD FROZEN FOOD ASSN.

Hy Epstein has been elected president of the National Prepared Frozen Food Processors Association to serve the group in 1958.

Other officers elected were: Meyer Dubrow, first vice president; Warren Friedman, second vice president; Bruce Hartman, third vice president; and Bernard Zipern, treasurer.

Save Time—Save Money

with these dependable
Insulation Hangers

Will not damage protective coating in any way



Here's what you need for fast, easy, low-cost application of insulation to ducts, etc. *Gemco Metal Insulation Hangers* and *Tuff-Bond General Purpose Adhesive* for rough surfaces... *Tuff-Weld Nylon Insulation Hangers* and *Quik-Set Adhesive* for smooth surfaces. These hangers and adhesives provide ample strength to hold insulation in place securely. (Use *Gemco Self-Locking Washers* to lock insulation to hangers.) Investigate today!

GOODLOE E. MOORE, Incorporated, Danville 40, Illinois
or... W. D. Elmslie, Ltd., 4837 Lawrence Blvd., Montreal, Canada

Please send complete details and prices on *Gemco* and *Tuff-Weld Insulation Hangers*.

Name _____
Company _____
Address _____
City _____ State _____

Circle No. 86 on Reader Service Card

Instruments for Measuring AIR TEMPERATURE and VELOCITY

TEMPSCRIBE Recording Thermometer

Available in 10 different ranges to cover -30°F to $+160^{\circ}\text{F}$ temperatures, and with spring-operated chart drives for any of the following chart rotations: 8 hours, 24 hours or 7 days.

This entirely self-contained, compact and reliable temperature recorder automatically writes a continuous record of temperature changes on a replaceable chart. Record shows at a glance maximum and minimum temperatures and the duration of temperatures above or below any given point; also shows the exact time of every temperature change and how rapidly it takes place. Recording pen and bi-metallic element are built in hinged, removable door which is also front of instrument. Thus, by merely changing doors it is easy to interchange temperature ranges. Instrument is 8" tall, $5\frac{1}{2}$ " wide and $4\frac{1}{2}$ " deep. Charts are $4\frac{1}{2}$ inches in diameter.



Write for Bulletin I-715

FLORITE Anemometer

In principle, this unique instrument operates as an anemometer but provides instantaneous, direct readings of air velocity without timing, calculations or reference to charts. Readings are obtained by holding the instrument in the air stream so that air blows against its circular face, causing rotation of a multi-blade rotor mounted in instrument housing. The circular scale surrounding the rotor instantly turns to correct air velocity reading under an index pointer on scale window. Furnished with detachable handle (not shown) and leather case.



Available in two styles. One with a scale of 0-1000 ft./min., and the other with a scale of 0-3000 ft./min.

Write for Bulletin I-760

BACHARACH Industrial Instrument Co.

200 N. Braddock Ave., Pittsburgh 8, Pa.

Circle No. 85 on Reader Service Card
NOVEMBER, 1957 • COMMERCIAL REFRIGERATION

See the Complete Scotsman Ice Machine Line Booths 747-749 at the "All Industry" Show



While you're at the A.R.I. show in Chicago, November 18-21, be sure to drop in at the Scotsman exhibit in Booths 747-749 at the Amphitheater. See the hottest line of ice machines in the industry!



**America's Most
Specified Line of
Ice Machines!**



**More Than 40
Machines for You
to Sell!**



**Models for Every
Prospect,
Big or Small!**



**Scotsman Dealers
Are Making
More Money!**



**Cash in with
Scotsman, the
Industry Leader!**



**Send in the Coupon
Your Ticket to
Profits!**



SCOTSMAN

Super Cubers



Super Flakers



**Yes! Send me complete information about a
dealer franchise for Scotsman Ice Machines.**

NAME

ADDRESS

CITY ZONE STATE

Mail to: American Gas Machine Co., Division Queen Stove Works, Inc.,
1911 Front Street, Albert Lea, Minnesota

ON THE SPOT . . .

Continued from page 87

In the luncheonette, Newton quickly spotted the trouble.

"A clogged condenser," he told the customer. Using gas under pressure from his brazing torch outfit he cleaned out the condenser, made a few simple but vital adjustments, and put the case back into operation. Less than 15 minutes had elapsed since he had received the radio call.

As Newton was leaving, Schwartz mentioned to him that the ice cream cabinet in his fountain unit wasn't working the way it should, either. Newton checked and found a defective expansion valve, which he replaced.

All in all, Newton spent 26 minutes at the luncheonette, until he was satisfied that all refrigeration equipment was again in top working condition. Then he went back to his truck and radioed his job report to the dispatcher.

The dispatcher gave Newton a new address, and he was off again

on his next assignment. Another service call, effectively speeded by two-way radio, had been completed. Another satisfied customer breathed a sigh of relief at the prompt attention he had received.

TRANE SERVICE NETWORK ADDS SOUTHERN CENTER

Trane Co. has expanded its countrywide service network to include a new center, the Manget-Trane Service Agency, at the firm's sales office in New Orleans.

The new service engineer is Earl B. Earle. Fred Manget is the office manager.

ARMSTRONG COMBINES 2 WEST COAST OFFICES

The Los Angeles and San Francisco offices of the Insulation Div., Armstrong Cork Co., are being merged to form the San Francisco-Los Angeles district office, according to A. E. Pearce, general sales manager of the division.

John S. Taylor, district manager

of the San Francisco office, has been named district manager for the combined operation. Mann C. Sweet, of the Los Angeles office, will serve as branch manager at Los Angeles under Taylor.

MEIER SUPPLY IS NEW JOBBER IN BINGHAMTON

Meier Supply Co., Binghamton, N. Y., has purchased the air conditioning and refrigeration supplies stock of the W. A. Case & Son branch store in Binghamton, and is now operating from headquarters at 222 Court St. The change in operation was effective Aug. 15.

F. M. Meier, owner of the new wholesaler firm, has been in the wholesale refrigeration supply business since 1938 and is well known among industry men in the Binghamton trading area.

Meier says the company will specialize entirely in refrigeration and air conditioning supplies for fast, efficient service to the trade in southern New York and northern Pennsylvania.

REMOVE CONDENSATE WATER FROM AIR CONDITIONING SYSTEMS



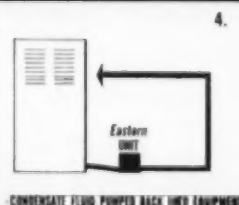
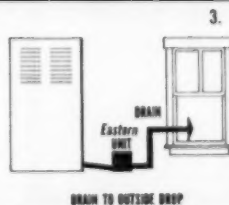
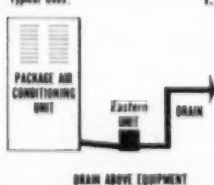
A completely automatic, foolproof unit designed to remove hot or cold condensate fluids from the receiver tank and pump it to an outside drain. Simple to install with air conditioning equipment, it gives quiet and reliable performance.

Eastern Model 3, Type 100:

Tank capacity 0.8 gallon. Centrifugal pump delivery approximately 4½ GPM at 0 P.S.I. and shut off of 12½ P.S.I. Motor 1/40 H.P., 115 volt. Weight 23 pounds. Mercury control switch. Size 5½ inches wide, 10 inches long, 11¼ inches high.

EASTERN INDUSTRIES, INCORPORATED
100 SKIFF STREET, HAMDEN, CONN.

Typical Uses:



Circle No. 89 on Reader Service Card

Equipped with trouble free **ALLEN-BRADLEY MOTOR CONTROL**

Trane's air-conditioning system in the London Guarantee Building, Chicago, uses Allen-Bradley solenoid motor control.


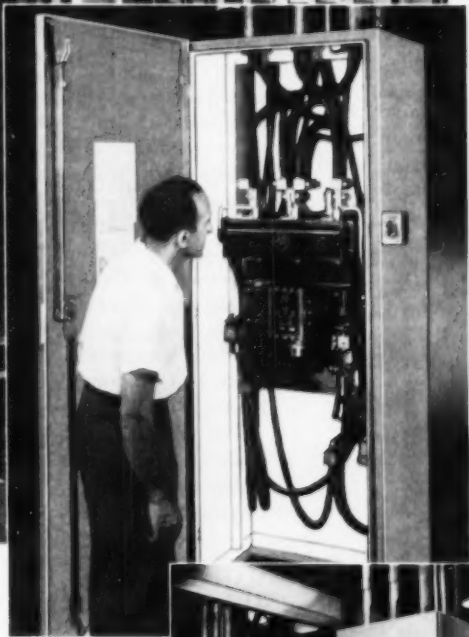
Manufacturers of large air-conditioning and refrigeration systems realize that the reliability of their system and the reliability of the motor control used are identical—for all practical considerations. That's why the Allen-Bradley trademark—the sign of quality motor control—is so frequently seen on important jobs.

The simple solenoid starter design—exclusive with Allen-Bradley in *all* sizes up through Size 7—has only *one* moving part. This is your assurance of millions of trouble free operations. There are no bearings to corrode and stick . . . no flexible jumpers to wear and break. Also, the double break, silver alloy contacts—used throughout the Allen-Bradley line—never need cleaning, filing, or dressing. Downtime for contact maintenance is eliminated . . . and so are "service calls." You can install Allen-Bradley motor control . . . and forget it.

A decision you'll never regret—to standardize on Allen-Bradley motor control. Its proven reliability costs you no more. The Allen-Bradley trademark is universally accepted.

Please write for your copy of the latest Allen-Bradley Handy Catalog . . . the 132-page guide to trouble free a-c and d-c motor control.

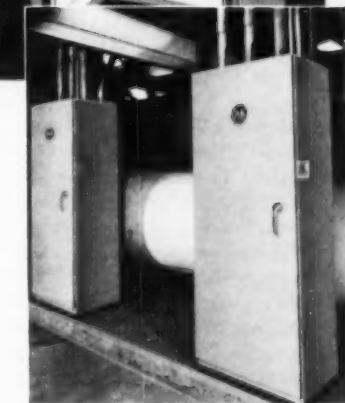
Allen-Bradley Co., 1340 S. Second St., Milwaukee 4, Wis.
In Canada—Allen-Bradley Canada Ltd., Galt, Ont.

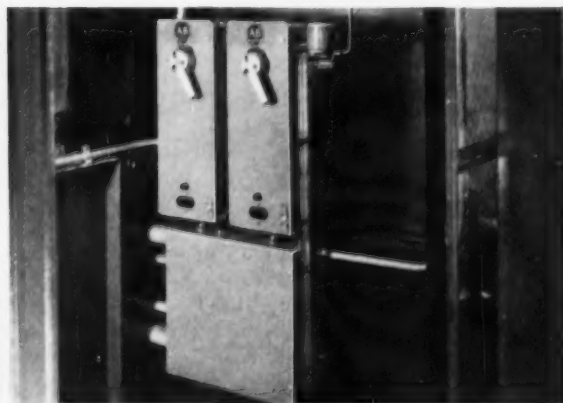
One of the Bulletin 709 Size 7 across-the-line starters used with the 250 hp, 208 v pump motors.



THE SIGN OF
QUALITY
MOTOR CONTROL



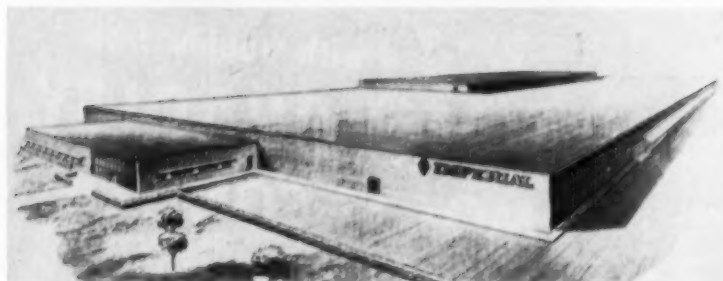
• The two Bulletin 709 Size 7 across-the-line starters for parallel pumps. Single or dual operation. Alternate starting is also provided.



• Zone air handling units are mounted on each floor in the elevator shaft. A set of two Bulletin 712 Size O combination starters—one for each intake and exhaust motor—are used with each of the 19 units in the building.

Circle No. 91 on Reader Service Card

IMPERIAL BRASS GETS A NEW HOME



READY FOR OPERATION is the new Imperial Brass Mfg. Co. facility at Niles, Ill., Chicago suburb. An architect's drawing shows the modern structure.

IMPERIAL MOVES INTO NEW NILES, ILL., PLANT

A completely integrated tube fitting and tubing tool manufacturing facility has been placed into operation at a Chicago suburb, Niles, Ill., by Imperial Brass Mfg. Co.

The move into this plant was completed at the end of October, according to F. C. Shafer, the firm's president.

The structure houses the company's executive and sales offices as well as all of its manufacturing facilities.

From the steel chip wearing surfaces of the main aisles in its manufacturing section, to the insulated roof slabs, the new facility is said to contain the most advanced equipment available in plant design.

Containing a total of six acres under roof, the structure has an exterior surface of buff-colored face brick, with interior wall surfaces of multi-colored glazed tile.

Some 235,000 sq. ft. of space is being used for manufacturing, inspection, packaging, and shipping operations.

Separate tabulating, engineering, and personnel departments have been installed as part of the executive office groupings, with office space occupying 27,000 sq. ft.

AP&CC TO DISTRIBUTE ISOTRONS NATIONALLY

Pennsalt Chemicals Corp. has named the American Potash & Chemical Corp. a national distributor for its Isotron refrigerant chemicals.

According to a joint announcement by George A. Schnier, manager of AP&CC's Refrigerant

Chemicals Div., and Frank A. Lucard, manager of Pennsalt Isotron sales, the agreement becomes effective on Jan. 1, 1958, and will cover the complete Pennsalt refrigerant line including Isotron 11, 12, 22, 113, and 114.

American Potash & Chemical Corp., with 20 years' service to the refrigeration wholesaler trade, will continue the manufacture and distribution of sulfur dioxide and methyl chloride to provide a complete line of chemicals for all types of commercial, home, and automotive refrigeration units.

AP&CC's packaging and distribution system will be continued both domestically and abroad under the present setup. The company's refrigerant packages range from 1 lb. to 2000 lbs., including 1 and 2 lb. Charga-a-Can disposable containers.

9 NEW DIRECTORS ARE ELECTED BY AMCA

Nine new directors have been elected unanimously by members of Air Moving & Conditioning Association (AMCA) at its recent third annual meeting.

Each of the six divisions of the association is represented by one director, in addition to the three directors-at-large.

Elected for a one year period are: L. Macrow, manager of Systems & Equipment Dept. of Machinery & Systems Div., Carrier Corp., representing AMCA's Central Station Air Conditioning Div. R. A. Wasson, vice president and general manager of Clarage Fan Co., representing the association's Centrifugal Fan Div.

E. J. Stone, sales manager, Pro-

pellair Div., Robbins & Meyers, Inc., representing Industrial Axial & Propeller Fan Div., W. A. Curtis, manager of Blower Div., Peerless Electric Co., representing Power Roof Ventilator Div., Wallace Allen Jr., secretary of American Coolair Corp., representing Residential Fan Div., J. J. Merrick, division sales manager, John J. Nesbitt, Inc., representing Unit Heater Div.

Also elected directors-at-large for a one year term are: W. H. Rietz, president, Ilg Electric Ventilating Co.; J. W. Wilcock, sales manager of Sturtevant Div., Westinghouse Electric Corp.; and C. W. Lockhart, sales manager of the Blower and Air Div., Buffalo Forge Company.

TWO RECEIVE DIAMOND KEYS AT WOLVERINE

The 16th Wolverine Tube Diamond Key award has been presented this year to James L. Threlkeld and Dr. Tamami Kusuda.

Awarded annually since 1940 for outstanding technical papers in the refrigeration field, duplicate 1957 keys were bestowed upon Threlkeld, professor of mechanical engineering at University of Minnesota, and Kusuda of the Worthington Corp., East Orange, N. J., for their outstanding article, "Temperature Changes in Refrigerated Rooms During Pulldown Period".

The award presentations were made at the annual meeting of American Society of Refrigeration Engineers in Miami, Fla.

MARSHALL ALLEN NAMED AIR MOVING GROUP VP

Marshall F. Allen has been appointed executive vice president of Air Moving and Conditioning Association, Inc.

Allen succeeds L. O. Monroe, former administrative head of the 53-member company trade association, who will retire.

For the past several years, Allen has been manager of the Magnesia Insulation Manufacturers Association, Washington, D.C. Prior to that, he was secretary and staff engineer of the National Aircraft Standards Committee, sponsored by the U. S. Aeronautics Chamber of Commerce.

IT'S HERE . . . COMPACT CAPACITY

DETROIT'S ALL NEW EXPANSION VALVES

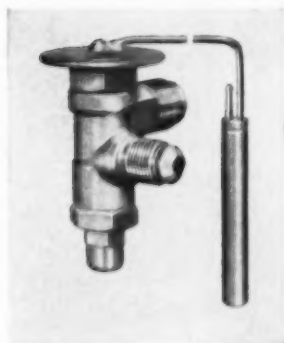
An entirely different concept in expansion valves—the completely new No. 717 and No. 718. Each of these valves is designed with a minimum of moving parts, to provide a more compact unit with greater capacity.

These new valves offer:

- **The Smallest Valves Per Ton Of Refrigeration**
Broader use in more limited spaces.
- **Close Superheat Control**
Minimizes surge for maximum valve operating efficiency.
- **Broad Range Of Application**

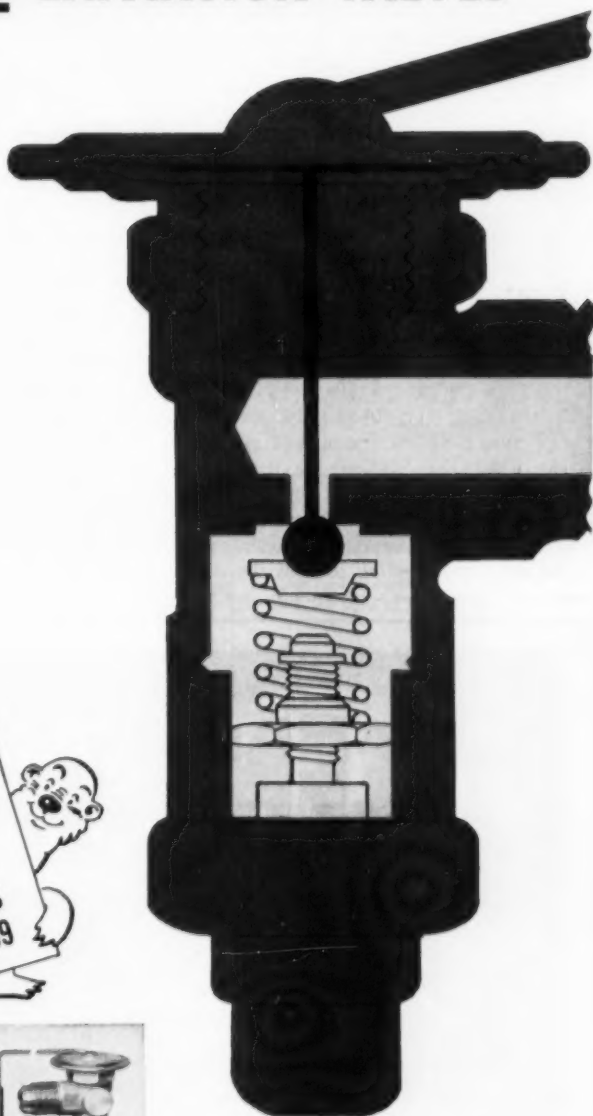
1/2 to 3 tons	R-12
1/2 to 5 tons	R-22

 C and Z charges available.
- **Easier To Service**
Entire valve easily disassembled for inspection and cleaning.
- **Connection Sizes**
 1/4 and 3/8 S.A.E. Inlet with strainer.
 1/2 S.A.E. Outlet.



The new No. 718 Expansion Valve. Also available with external equalizer.

The No. 717 is a factory set valve of the same basic design as the No. 718 Expansion Valve. The No. 717 superheat setting is easily adjusted in the field before installation, with an Allen wrench through the inlet connection, to allow superheat settings other than standard. The adjusting screw is not sealed or soldered.



For complete information see your DETROIT Wholesaler.

Quality Protects Your Investment-- AMERICAN-Standard Quality Is Available At No Extra Cost.



5900 Trumbull Avenue
Detroit 8, Mich.

DETROIT CONTROLS

Division of AMERICAN-Standard

Canadian Representatives: R. & E. REFRIGERATION & HEATING SPECIALTIES LTD., Montreal, Toronto, Winnipeg

Circle No. 92 on Reader Service Card

ARI DROPS THREE OLD STANDARDS

The Air-conditioning and Refrigeration Institute announces that three old standards have been abandoned as "no longer valid or necessary". The three are:

ARI 5-50, Insulation for Cold Storage Rooms; ARI 5-70, Location and Inspection of Data Plates on Refrigerant-Containing Vessels, and ARI 5-80, Steel and Wrought Iron Pipe. All three standards were initiated and established by the Air-Conditioning and Refrigerating Machinery Association, one of ARI's predecessor organizations.

Abandonment was recommended by the engineering committee of the ARI's Air-Conditioning and Refrigeration Systems Section and by the section itself.

TRANE PROGRAM AIMED TO AID WHOLESALERS

A new program designed to assist wholesalers to increase their sales in the building and remodeling markets has been by Trane Co.

A complete literature selection has been prepared as part of the

program. One piece, a sales aid handbook, contains a variety of proven ideas to help the wholesalers and his salesmen.

A short course in heating also is being provided. The course, administered by Trane sales engineers, is to be given when and where the wholesaler desires.

The program consists of over 20 promotional pieces including catalogs, booklets, and displays.

LIST MAY 7-11 FOR '58 WESTERN TRADE SHOW

Western Air Conditioning Industries Association has announced plans for its 1958 conference and exhibit, at the Shrine Exposition Hall, Los Angeles, May 7-11, 1958.

Fred J. Tabery again has been appointed to serve as exhibit manager. He reports that a large percentage of the exhibitors who participated in 1957 already have reserved their space, in addition to approximately 40 who were not represented in 1957. Information may be obtained from Tabery at 3443 So. Hill St., Los Angeles.

ROW-CON TO REPRESENT TUBE MANIFOLD CORP.

Appointment of Row-Con, Inc., Dayton, Ohio as factory representatives for TMC "Molecular Sieve" filter-driers is announced by Tube Manifold Corp.

Row-Con, Inc. is headed by H. E. Rowland and I. A. Conley who are handling sales throughout the Ohio, Indiana and Kentucky territory, as part of the expansion of the Tube Manifold sales force.

FAIRBANKS CO. OPENS CHICAGO BRANCH OFFICE

Fairbanks Co. announces the opening of its Chicago branch office and warehouse at 2600 S. Throop St. George P. Leckler has been appointed manager of the operation.

The company also announces the appointment of Frank Hockett Co., Mesa, Ariz., as its sales representative in the state of New Mexico.

BUY FROM YOUR REFRIGERATION WHOLESALER



Permasorb® Filter-Driers

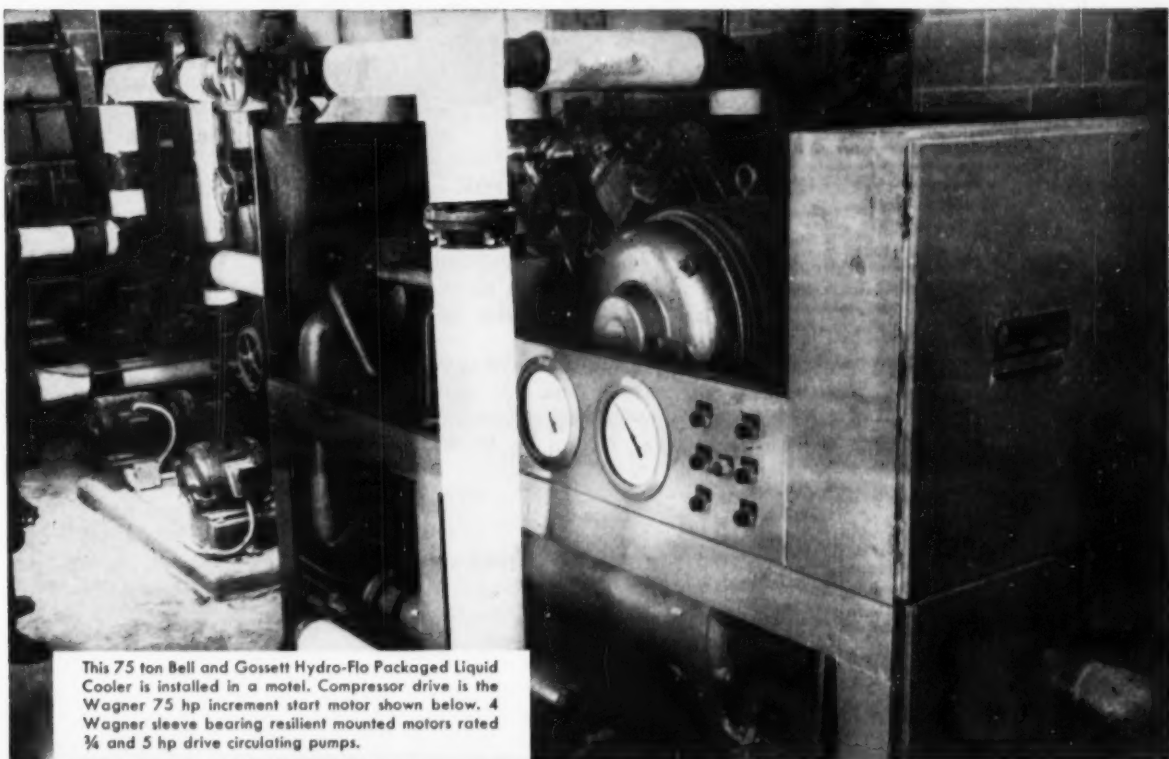
WITH MOLECULAR SIEVE

- Cartridge Type Shells with Replaceable Cartridges
- Factory-sealed Type
- Permaclean Filters
- Formed Felt Filter Elements
- Liquid Indicators
- Accessories
 - Charging hoses • Flexible refrigerant and water hoses • Tube clips • Hangers
 - Perforated straps • Hot water dispensers
 - Water strainers • Water bubblers • Water valves • Glass fillers
- Factory-sealed Strainers
- Cleanable Strainers

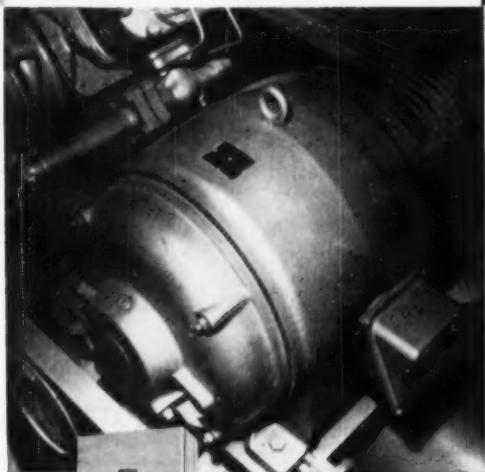
See them all at
BOOTH 160
10th Exposition, Nov. 18-21



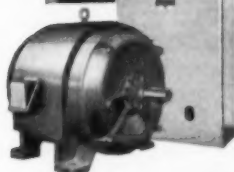
THE McINTIRE COMPANY, Livingston, New Jersey



This 75 ton Bell and Gossett Hydro-Flo Packaged Liquid Cooler is installed in a motel. Compressor drive is the Wagner 75 hp increment start motor shown below. 4 Wagner sleeve bearing resilient mounted motors rated $\frac{3}{4}$ and 5 hp drive circulating pumps.



Wagner two-step combinations suit most applications. For installations where unusually low inrush of starting current is required, Wagner can furnish 3, 4, 5, or 6 step increment motor-starter combinations.



WAGNER

Increment Motor-Starter Combinations limit inrush of current when starting big motors

Part-winding starting is a good low-cost way to limit inrush of starting current on large squirrel-cage motor installations. Wagner Increment Motor-Starter Combinations permit such starting—meet all polyphase motor starting recommendations of AEIC—EEI—NEMA—and provide many years of troublefree operation.

These Wagner motor-starter combinations are not bulky, are easy to install, and are *proven* efficient and dependable in operation—Wagner has been supplying these combinations for over 17 years.

Why don't you investigate Wagner Increment Motor operation? Ask your nearby Wagner engineer to take you to an installation in your area. See how it works—judge for yourself, and then let him help you select the combination that meets your requirements. Call the nearest of our 32 branch offices, or write for Bulletins MU-128 and MU-195.

BRANCHES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES

Wagner Electric Corporation
6442 Plymouth Ave., St. Louis 14, Mo., U.S.A.

M57-14

VISIT US AT BOOTH 672 — 10TH EXPOSITION AIR CONDITIONING & REFRIGERATION INDUSTRY

Circle No. 95 on Reader Service Card

FREE!

W. R.	REFRIGERANT	LOW BACK PRESSURE	MEDIUM BACK PRESSURE	HIGH BACK PRESSURE
1-1/2 Ton Control	P12	C10	C10	C10
1-1/2 Ton	P12	C10	C10	C10
2-1/2 Ton Control	P12	C10	C10	C10
2-1/2 Ton	P12	C10	C10	C10
3-1/2 Ton Control	P12	C10	C10	C10
3-1/2 Ton	P12	C10	C10	C10
4-1/2 Ton Control	P12	C10	C10	C10
4-1/2 Ton	P12	C10	C10	C10
5-1/2 Ton Control	P12	C10	C10	C10
5-1/2 Ton	P12	C10	C10	C10
6-1/2 Ton Control	P12	C10	C10	C10
6-1/2 Ton	P12	C10	C10	C10
7-1/2 Ton Control	P12	C10	C10	C10
7-1/2 Ton	P12	C10	C10	C10
8-1/2 Ton Control	P12	C10	C10	C10
8-1/2 Ton	P12	C10	C10	C10
9-1/2 Ton Control	P12	C10	C10	C10
9-1/2 Ton	P12	C10	C10	C10
10-1/2 Ton Control	P12	C10	C10	C10
10-1/2 Ton	P12	C10	C10	C10
11-1/2 Ton Control	P12	C10	C10	C10
11-1/2 Ton	P12	C10	C10	C10
12-1/2 Ton Control	P12	C10	C10	C10
12-1/2 Ton	P12	C10	C10	C10
13-1/2 Ton Control	P12	C10	C10	C10
13-1/2 Ton	P12	C10	C10	C10
14-1/2 Ton Control	P12	C10	C10	C10
14-1/2 Ton	P12	C10	C10	C10
15-1/2 Ton Control	P12	C10	C10	C10
15-1/2 Ton	P12	C10	C10	C10
16-1/2 Ton Control	P12	C10	C10	C10
16-1/2 Ton	P12	C10	C10	C10
17-1/2 Ton Control	P12	C10	C10	C10
17-1/2 Ton	P12	C10	C10	C10
18-1/2 Ton Control	P12	C10	C10	C10
18-1/2 Ton	P12	C10	C10	C10
19-1/2 Ton Control	P12	C10	C10	C10
19-1/2 Ton	P12	C10	C10	C10
20-1/2 Ton Control	P12	C10	C10	C10
20-1/2 Ton	P12	C10	C10	C10



the only CAPILLARY reference GUIDE for the industry

The trend for economy and efficiency is engineered Capillaries. By all laws of refrigeration and physics demand a custom designed Capillary. A Sealed Unit Guide will help you order the right Capillary for the job!

Sealed Unit Parts Co., Inc.
261 East 161st St. New York 51, N. Y.

Send CAPILLARY Guide and prices

Name _____ City _____

Address _____ Zone _____ State _____

RECORD DENVER REP.

Don Bachman Co. of Denver, Colo., has been appointed to distribute air conditioning and heating products for Recold Corp.

PENNSALT DISTRIBUTOR

Pennsalt Chemicals Corp. has named American Potash & Chemical Corp. a national distributor for its Isotron refrigerant chemicals, according to a joint announcement.

The agreement becomes effective on Jan. 1, 1958, and will cover the complete Pennsalt refrigerant line including Isotron 11, 12, 22, 113, and 114.

CARRIER NAMES ANDREWS IN CENTRAL TENNESSEE

Andrews Distributing Co., Inc. has been appointed distributor for Carrier in the Nashville-Chattanooga area. The company will handle Carrier's full room and residential air conditioner line as well as a complete range of self-con-

tained equipment for commercial and industrial application.

J. R. Andrews, president, formerly headed Radio & Appliance Corp. of Nashville. Associated with him is his son, John N. Andrews. Headquarters are at 527 Eighth Ave. S., Nashville.

Carrier applied systems will continue to be sold through M. T. Gossett Co., Nashville, and J. W. Brooks & Son, Chattanooga.

CARRIER SUBSIDIARY EXPANDS FACILITIES

An expansion of the facilities of Colorado Research Corp. of Denver, has been announced.

The electronic development organization a subsidiary of Carrier Corp., is engaged in the study of advanced air conditioning methods for Carrier.



Refrigeration and Air Conditioning RELAYS



KLIXON



GENERAL



ELECTRIC



HOT WIRE

REQUEST OUR CATALOG SHEETS

Your Relay Source...

SAM HAMMER • INC.

♦ 698 WASHINGTON AVENUE
♦ BROOKLYN 38 • NEW YORK

SOLD ONLY
THROUGH
JOBBER

Circle No. 96 on Reader Service Card

LORD & PALMER REP.

Lord & Palmer, Inc., has named Metal Distributing Co., Inc., Alexandria, Va., Mercury commercial and air conditioning distributor in the Washington, D. C., trading area. Metal Distributing also will service Mercury dealers in five counties in Maryland and 17 in Virginia.

BUY FROM YOUR
REFRIGERATION WHOLESALER



50 Tons of ice are made per day



Frick-freezing tunnels handle 140,000 lb. daily



Air units cool 1½-million-lb. freezer storages



Fruit storages hold 375,000 bushels

Virginia Co-op., Processing 36,000 Chickens Daily, Gets Multiple Services from



Refrigeration

The Rockingham Poultry Marketing Cooperative, Inc., has six buildings in its great plant near Broadway, Va.

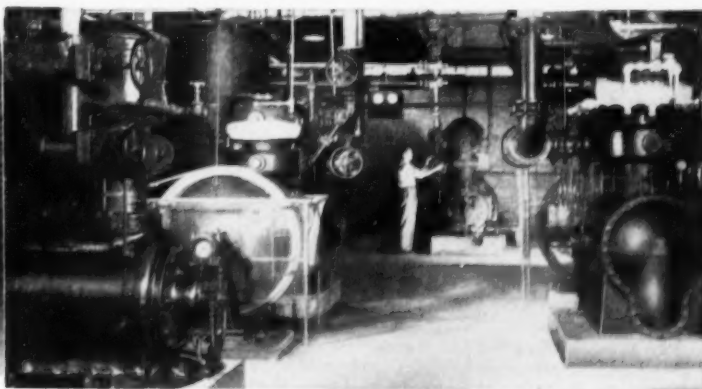
Frick refrigeration has aided the growth of the plant for 20 years in a wide variety of ways—cooling storages to different temperatures, quick-freezing poultry and other products, making ice, and doing air conditioning.

Visitors come from afar to study the outstanding methods used here, and the results obtained.

What is YOUR special cooling problem? Let Frick Engineers aid you in solving it now. Write, wire or phone



Also Builders of Power Farming and Sawmill Machinery



Thirteen Frick compressors, (several under automatic control) keep the varied loads balanced with an economical booster system

PROFESSOR NOMINATED FOR ASHAE PRESIDENT

Elmer R. Queer, director and professor of engineering research, Pennsylvania State University, has been nominated for the presidency of American Society of Heating and Air-Conditioning Engineers.

The report of the nominating committee also includes for first vice president, Arthur J. Hess, President of Hess-Greiner & Poland, Los Angeles, Calif.; second vice president, Walter A. Grant, vice president, Carrier Corp.; and treasurer, John H. Fox, vice president-Sales, Honeywell Controls, Ltd., Toronto, Ont., Canada.

Nominees for three-year terms on Council are Frank H. Faust, manager, product planning, Commercial and Industrial Air Conditioning Dept., General Electric

Co.; Fred Janssen, Standards Engineer, Gas Dept., Public Service Co. of Colorado, Denver; James W. May, director of technical training, American Air Filter Co., Louisville; and Gayle B. Priestler, air conditioning engineer, Baltimore Gas and Electric Co., Baltimore.

Candidates nominated to serve for three years on the committee on research are Paul R. Achenbach, chief, air conditioning, heating and refrigeration section, National Bureau of Standards, Washington, D.C.; Stanley F. Gilman, assistant director of research, Research and Development Div., Carrier Corp.

Neal B. Hutcheon, assistant director, Div. of Building Research, National Research Council, Ottawa, Ont., Canada; Richard M.

Stern, partner, Stern & Towne, Seattle, Wash.; Herbert E. Ziel, Albert Kahn Assoc., Archts. & Engrs., Inc., Detroit.

Members will vote by mail upon receiving proxy ballots and official notice of the 64th annual meeting which will be held at Pittsburgh, Pa., January 27-29, 1958.

Installation of elected officers and members of Council will take place.

BUENSOD-STACEY NAMES 5 NEW SALES REPS

Five sales representatives have been announced by Buensod-Stacey, Inc., for its dual-duct air mixing units and other air conditioning products.

They are: Barnhart-Dwyer Co., Albuquerque, N. M.; Pedley Equipment Co., Charleston, W. Va.; E. K. Strahan, Inc., New Orleans; H. Dewey Jones Co., Columbus, Ohio; and General Equipment Co., Spokane, Wash.

NAMED DISTRIBUTOR FOR A-C PUMPS

Hill Electric Air Conditioning, Inc., 307 S. Laura St., Wichita, has been named a distributor for Allis-Chalmers pumps in 10 central and southeastern Kansas counties. Hill Electric Air Conditioning was established in 1953 and is headed by Nihat Cengiz.

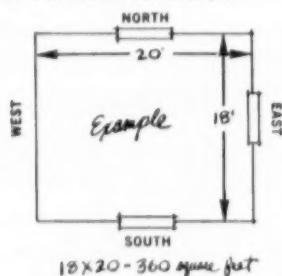
WALL WIRE PRODUCTS, HELICAL TUBE MERGE

Wall Wire Products Co. and Helical Tube Corp. announces the merger of their operations, facilities and assets at Newport, Tenn. All business in the future will be conducted under the single corporate title of Wall Tube and Metal Products Co.

The merger has been announced by John Goble, chairman of the board of the new firm. Goble also announced the election of other officers as follows: W. W. McMinn Sr. president; M. M. Wachowiak, executive vice president; W. W. McMinn Jr., vice president; F. L. Dempsey, vice president; F. G. Higbee, vice president, and S. B. Fortenbaugh, secretary.

HOW MUCH COOLING?

Here's an ABC formula developed by air conditioning engineers at Gibson Refrigerator Company to help you figure the cooling capacity needed for any room under a variety of conditions as shown in the example.



A AREA OF ROOM 360

USE ONLY ONE

ROOM WITH ATTIC ABOVE
x 13 =
AREA SQUARE FEET

ROOM WITH OCCUPIED ROOM ABOVE
360 x 8 = 2160
AREA SQUARE FEET

ROOM WITH FLAT ROOF ABOVE
x 19 =
AREA SQUARE FEET

B WALL MOST EXPOSED TO SUN

18 x 90 = 1620
LENGTH IN FEET

C OTHER WALLS

INCLUDE ALL WALLS NOT IN "B"

20 x 20 = 400
58 x 30 = 1740
TOTAL LENGTH
IN FEET



D WINDOWS MOST EXPOSED TO SUN

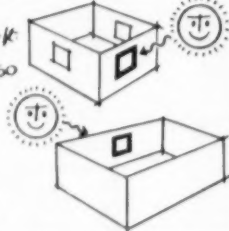
USE ONLY ONE

EAST OR SOUTH WITH SHADES

3' x 2' 8" = 8 sq. ft.
8 x 45 = 360
GLASS AREA
SQUARE FEET

WEST WITH
SHADES

x 100 =
GLASS AREA
SQUARE FEET



E OTHER WINDOWS

INCLUDE ALL WINDOWS NOT IN "D"

16 x 14 = 224
GLASS AREA
SQUARE FEET



A	2160
B	1620
C	1740
D	360
E	224
TOTAL	6104

This total is the approximate BTU rating required for an air conditioner to cool the room properly if it is to be used by two people. Add 500 for each additional person. Data: Gibson Refrigerator Company

PROSPECTS CAN FIGURE the size room air conditioner they'll need by using this simple formula developed by Gibson Refrigerator Co. engineers. It's part of a publicity release prepared by the company for consumer publications.

How high velocity provides maximum comfort for schools

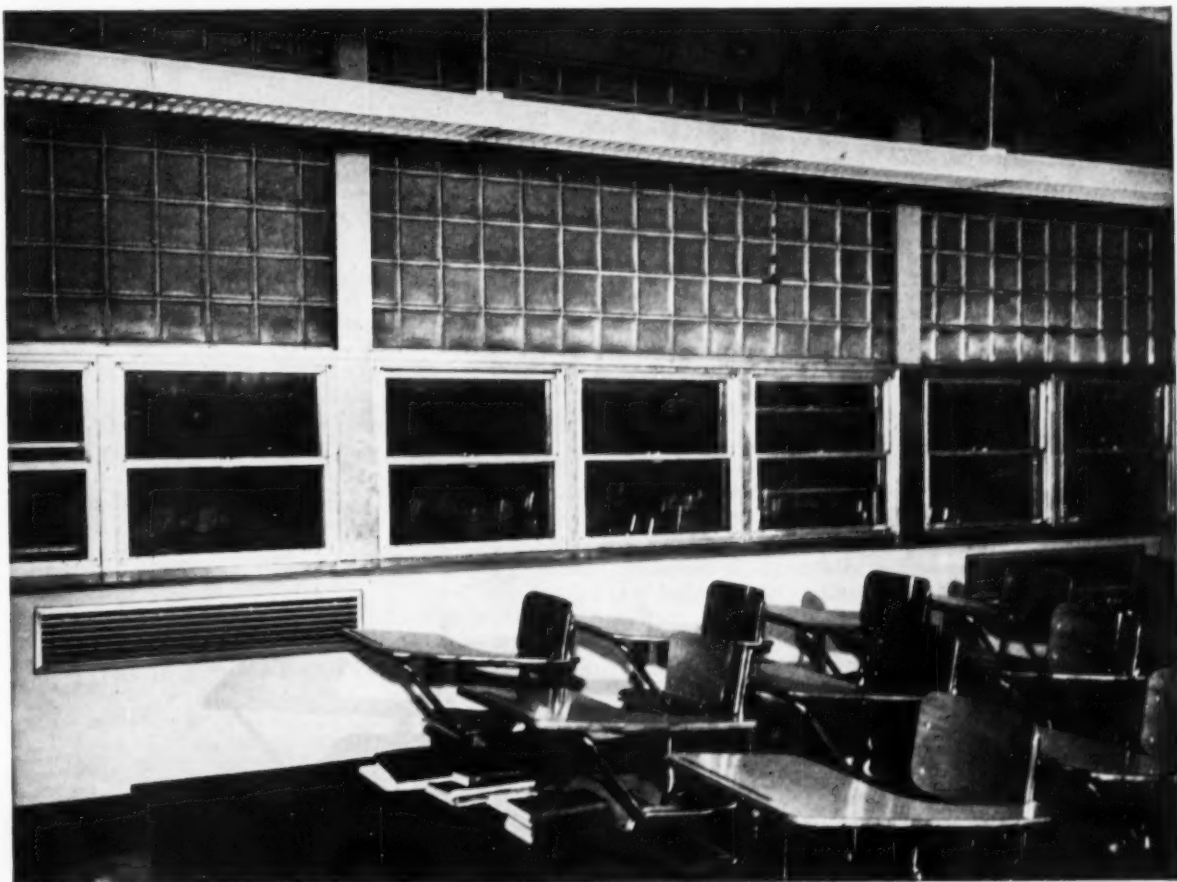
The *Anemostat All-Air High Velocity* system of draftless air distribution offers many important advantages for heating and ventilating schools. • High velocity units, used with smaller than conventional ducts, save space and money. They substantially reduce sheet metal required, can be installed faster, at less cost. Since there are no coils in All-Air HV units, clogging and odors are eliminated. • *Anemostat All-Air HV* operate entirely with air processed in the main equipment room; there is, therefore, no need to break through the walls of the building for prime air make-up. The *Anemostat All-Air HV* units eliminate fans, filters, and electric motors in the school rooms. Units are quiet, need a minimum of maintenance from custodians. • On these pages are typical installations in which the *Anemostat All-Air High Velocity* system has been used successfully. Application data on your specific school heating, ventilating or air conditioning problem is available from Anemostat representatives or from the home office.

Write on your business
letterhead for your copy of

New Anemostat® Selection Manual 60

to Anemostat Corporation of America,
10 East 39th Street, New York 16, N. Y.

AC 1506



INSULATION . . .

Continued from page 85

face are absorbed and emitted as heat. Thus, by using aluminum foil backed insulation, or aluminum accordion-pleated blanket type insulation, the radiation heat loss (or gain), which may represent up to 30% of the entire heat flow, may be reduced by 95%.

While we are considering the relative merits of various types of insulating media, we should also be considering the problem of condensation in the home. Where condensation does exist, we can look for wet spots and falling plaster, severe paint peeling and ultimately the rotting of timber.

The condensation problem reaches its peak during the winter months. With low outside dry and wet bulb temperatures, the air surrounding the house has a relatively low vapor density. Inside the house the vapor density of the air is generally much higher due to cooking, the use of shower baths and the use of automatic laundry equipment.

The difference in vapor density inside and out creates a pressure which drives the moisture into the insulation in the form of vapor. When this vapor reaches the dew-point in the insulation, it will condense to water and be absorbed into the insulation or building materials.

Since water has a conductivity of about 15 times that of the average insulating material, it is understandable that water-soaked insulation is relatively inefficient. To block vapor's natural surge to reach a condensation point requires a vapor barrier material like aluminum that, by its very nature, can neither pass or absorb water vapor.

Designing the modern home for year-round living comfort with economy means gaining the maximum reduction in winter heat loss and summer heat gain, as well as the elimination of costly and damaging condensation. The cost of lowering the indoor temperature 1 F in summer is about equal to raising it 5 F in winter, so the savings that accrue from proper insulation can be substantial.

The following outline can be

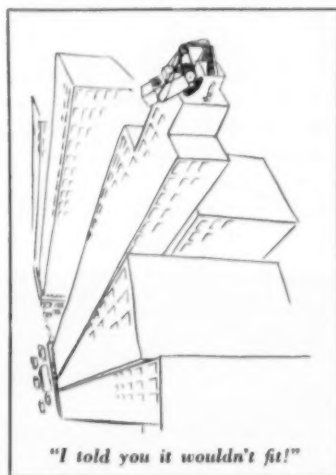
used as a check list in planning residential insulation requirements:

A. Attics and Ceilings

1. Insulate the top floor ceiling, unless the attic is to be used as living area, in which case, insulate the knee walls and header ceiling instead. Approximately 30% of summer heat gain is through the roof, and 25% of winter heat loss is through the roof. Be sure to provide adequate ventilation in the space between the insulation and the peak of the roof.

B. Walls

1. Insulate all outside walls and be sure that the vapor barrier faces the inside of the house.



2. Also insulate all partition walls separating conditioned areas from non-conditioned spaces such as garages, sun porches and storage rooms.

C. Floors and Slabs

1. The bare earth below a crawl space floor should be covered with a vapor barrier. The crawl space should be ventilated, and insulation applied to the floor above (see Fig. 1).

2. Perimeter insulation should be installed in slab-type floors (see Fig. 2). Heat transfer between the slab proper and the earth beneath it is usually relatively low, since the ground temperature is approximately the same as that of the slab, so insulation is applied only at the slab edges. Generally, in slab-type homes, the heating and cooling ducts are buried in the slab so perimeter insulation becomes doubly important.

BRITISH ENGINEER HEAD OF VIKING PRODUCTION

Frank Higham, 36 year old British metallurgical engineer, has



F. Higham

recently been named director of manufacturing of the Viking Copper Tube Co., Cleveland. A designer, author and engineer, Higham helped develop the "bull block" technique of drawing copper tubing, used by Viking Copper Tube, for the Metals Div. of Imperial Chemical Industries, Ltd., British industrial firm.

Starting with ICI in 1936 as a junior assistant in the inspection and test room at the Broughton factory, Higham rose to the post of operations manager and deputy factory manager at the Kirkby factory. During his 20 years with ICI, he helped develop, plan and design new loading, drawing and production techniques for the fabrication of thinwall copper tubing.

He is the author of several papers applying to the field of high speed drawing of copper tube on "bull blocks" and on triple-draw benches. At Viking, Higham will be active in developing new processes and machinery in connection with the company's long-range expansion program.

HEADS ASHAE COMMITTEE

Arthur F. Hubbard, chief engineer of Herman Nelson Div., American Air Filter Co., Inc., has been named chairman of the Technical Advisory Committee on Sound and Vibration Control, of the American Society of Heating and Air Conditioning Engineers.

TRION NAMES 2 REPS

Trion, Inc., McKees Rocks, Pa., manufacturers of electronic air cleaning equipment, has appointed two additional representatives for its commercial and industrial units. They are: Air Filter Sales & Service Co., Inc., Jackson, Miss., and Devlin Brothers, New Orleans.

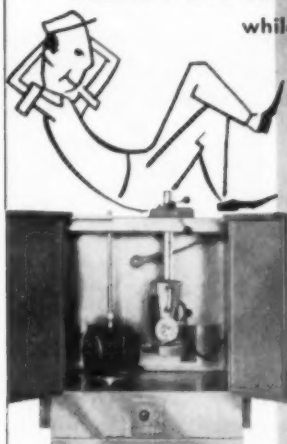
NOW! SIT BACK AND RELAX

while **FRANKELL'S**
HERMETIC
COMPRESSOR
OPENER

does the work

Thousands are finding more work hours in a day and bigger profits too, because of Frankell's Hermetic Compressor Opener. This amazing machine takes only 2 minutes of a man's time to open any shape compressor (up to 20" in diameter) — regardless of the position of the weld. Once the compressor is opened — the profit's yours.

No Experience Necessary — Simply Set Automatic Timer — No Watching . . . No Worry . . . No Special Jigs or Fixtures Necessary. And Only One Hermetic Repair Job a Week Will Pay For Your Hermetic Compressor Opener.



NOT A GIMMICK . . .
NOT A NOVELTY

This is the **ONLY** proven precision engineered hermetic compressor opener on the market.

SEND FOR THE COMPLETE STORY ON HOW FRANKELL CAN MAKE YOU BIG MONEY!

FRANKELL MFG. CO., INC.

1074 HOME STREET, NEW YORK 59, N. Y. WRITE DEPT. C

See us at the ARI 10th Exposition, Chicago Amphitheatre, Nov. 18-22, Booth #165

the **LIQUID EYE**®

POSITIVE SEALING INDICATORS

... your sign of **DEPENDABILITY** and **QUALITY**
USE IT WITH CONFIDENCE

- Pyrex glass, double pressure sealed at sides and ends.
- Positive check of refrigerant condition.
- Unrestricted full line flow.
- Spring-loaded gaskets insure positive seal against leakage.
- Guaranteed to 500 psi.
- Precision made.



Illustrated, 100 Series, 1/4" or 3/8" female by male flare

USED BY LEADING MANUFACTURERS ON ORIGINAL EQUIPMENT

Sold by leading wholesalers everywhere

Write today for Catalog E-57 covering the complete Allin line



ALLIN MANUFACTURING CO.
410 N. Hermitage Ave. • Chicago 22, Illinois
Over 1,000,000 Liquid Eyes Sold to Date!

See the full Liquid Eye line at Allin Booth 662, A.R.I. Show, Chicago, November, 18-21.

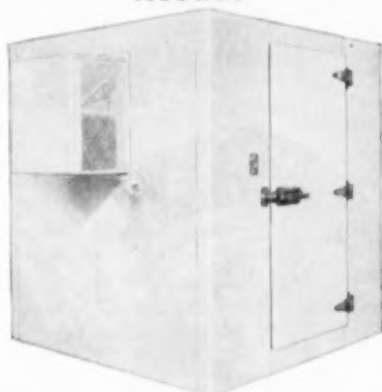
Circle No. 101 on Reader Service Card

& AIR CONDITIONING • NOVEMBER, 1957

cool, cold, or frozen

NOR-LAKE

answers all your refrigeration needs!



NOR-LAKE's All-Metal, Walk-In Cooler leads the field with: • New and amazingly compact NOR-LAKE Plug-In Panel for guaranteed power (optional) • Exterior of Cooler is rugged 20 ga. cold rolled steel • White baked enamel finish • Interior of galvanized sheet steel • Oil-sealed hardwood floor to lock out moisture • Fiberglass insulation. The NOR-LAKE all-metal, walk-in cooler is shipped in easy-to-put-together sections. Also available in stainless steel.



NOR-LAKE's Reach-In Refrigerators come in every size with: • Fiberglass Insulation • Hermetically-sealed compressor • Automatic defrosting unit • Choice of baked enamel or stainless steel finish • Available also with triple thermopane glass door.



NOR-LAKE's Sliding Door Beverage Cooler offers you:

- Durable stainless steel sliding doors
- Welded steel construction
- Heavy gauge galvanized liner
- 1/2 H.P. sealed compressor
- Adjustable temp. control
- 3" Hi-Density Fiberglass Insulation.

These are just three models in NOR-LAKE's complete line of coolers, refrigerators and freezers. For free details on the entire line or any specific model, simply fill in and mail the coupon today.

Dept. 202, NOR-LAKE, Incorporated, Hudson, Wisc.

Please rush me free information on:

NOR-LAKE Coolers _____ Freezers _____ Refrigerators _____
My type of operation (Restaurant, store, institution, etc.) _____

NAME _____

ADDRESS _____

CITY _____

STATE _____

All models available in stainless steel

For better freezing, cooling, and storing, look to the Northland and . . .

NOR-LAKE, Incorporated, Hudson, Wisconsin

Circle No. 100 on Reader Service Card

HIGHLIGHTS

FROM "THE STORY OF FREON®"

(ARI Show, Chicago)



CAVEMEN GROPED DOWN TO THE DARK COOL RECESSES OF THEIR CAVES TO ESCAPE THE HOT SUMMER HEAT.

ANCIENT EGYPTIANS PLACED POROUS EARTHEN JARS OF WATER ON ROOF TOPS OVERNIGHT. RAPID EVAPORATION FORMED THIN ICE, WHICH WAS COLLECTED TO COOL THE PHARAOH'S DRINKS.

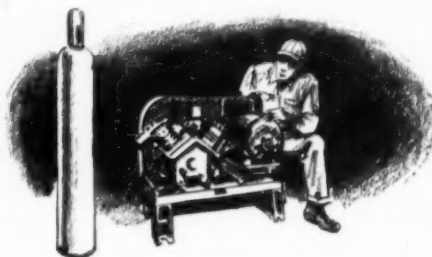
DON'T MISS THE COMPLETE STORY OF "FREON"
AT THE ARI SHOW

See Our Exhibit
10th EXPOSITION
AIR-CONDITIONING
& REFRIGERATION
INDUSTRY
INTERNATIONAL
AMPHITHEATRE
CHICAGO
NOV. 18-21 1957



• You'll see unusual displays, live demonstrations, a fascinating exhibition of the properties of "Freon", and many other interesting and instructive features. Be sure to see our exhibit in booth 402 at the 10th Exposition Air Conditioning and Refrigeration Industry in Chicago, November 18 to 21.

*Freon and combinations of Freon- and F- with numerals are Du Pont's registered trademarks for its fluorinated hydrocarbon refrigerants.



TODAY REFRIGERATION AND AIR CONDITIONING CONTRIBUTE VITALLY TO ALMOST EVERY AREA OF OUR SOCIETY. WITHOUT FREON® REFRIGERANTS, MUCH OF THE PROGRESS MADE IN THESE FIELDS WOULD NOT HAVE BEEN POSSIBLE.



REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING... THROUGH CHEMISTRY

Circle No. 103 on Reader Service Card

Here's How

PROFITABLE SERVICE AND INSTALLATION PRACTICES

Proper Maintenance of Welding Equipment Pays Off

KEEPING your oxy-acetylene welding and cutting outfit in good shape can help hold down operating costs of any service shop. Besides being safety hazards, leaky hoses waste gas. Damaged parts in your equipment can mean the difference between proper and improper functioning. A dirty welding or cutting tip can ruin a job.

Here are some maintenance tips offered by Linde Air Products Co., a division of Union Carbide & Carbon Corp.

A set procedure for periodic maintenance and inspection should be established. The manual supplied with your welding and cutting outfit shows some points which must be checked. Learn these points and check them whenever you begin a new job, or at slow times during your work day. Leak testing should be done at least once each month, more often if equipment has been continually in use.

Before you light a new outfit, and at frequent intervals after you've begun to use your outfit, test the assembled equipment for leakage. The outside points are easily tested by brushing a solution of clean water and a greaseless soap, such as Ivory, over the leak testing points given in your manual. If you find leaks at any of these points, use the following procedure to stop the gas leakage:

Leakage at the cylinder valve stem—Be sure the valve is opened all of the way when the test is made. If the oxygen cylinder valve stem leaks, close the cylinder valve and return the cylinder to your supplier. See that it is properly tagged and marked.

If the acetylene cylinder valve stem leaks, close the valve and tighten the packing nut. Open the

valve about $1\frac{1}{2}$ turns and test it again.

If the valve still leaks, close the valve and move the cylinder outdoors. Attach a tag saying that the valve leaks and warn everyone not to come near when they have a lighted cigarette or any other source of ignition. Call your supplier and have him pick up the cylinder.

Leakage at the regulator inlet connections—Close the cylinder valve and disconnect the regulator. Clean and examine all connections for damage. If the connections are damaged, send the regulator back to your supplier for repair. If the cylinder connection is marred, return the cylinder to your supplier.

I DO IT THIS WAY



HERE is a simple but helpful device that can be made from part of an ordinary set of radio-type earphones. It can be very useful in detecting and locating motor noises, compressor knocks, etc.

Take one earphone and insert one threaded end of a small metal rod into the center of the outside of the earphone cup. By simply touching the exposed end of this rod to the metal housing of the machinery to be checked, any noise will be transmitted by the rod in the form of vibrations and converted into audible sound by the earphone.

Dick Berry
Aurora, Ill.

Be certain to inspect your equipment after you have made any repairs on it. First crack the cylinder valve to blow out any dust, then attach the repaired regulator to the proper cylinder, making sure that the nut is tight. Open the cylinder valve and block off the regulator outlet with your thumb.

Adjust the working pressure to about 10 pounds per square inch on the acetylene regulator and about 25 pounds per square inch on the oxygen regulator. Test for leakage between the regulator cap and the regulator body. If the regulator still leaks, return it to your supplier.

Leaks at the hose connections—Shut off the regulator and disconnect the hose. Clean and examine the connection for damage. If the hose base connections are damaged, replace the parts, reconnect the hose, tighten with an open-end wrench and turn on the regulator. If the regulator or blowpipe connections are damaged, return the part to your supplier.

The best way to test the hose is to immerse it in water. If leaks are detected, replace with a new hose or cut out the defective section and splice with a hose coupling. *Do not use tape.*

Blowpipe valve stem leakage—Leakage at this point often can be eliminated by tightening the packing nut with a wrench. If this fails, replace the valve packing washers by following the procedure described in your manual.

Leaks at the blowpipe valve seats—Immerse the blowpipe tip in water. If bubbling occurs, it indicates leakage through one or more of the blowpipe valves. Determine which valve is leaking by

Circle No. 90 on Reader Service Card

**ALLIED
TRAINING in**



Air Conditioning and Refrigeration

■ PLAN 1: 100 HOURS

Intensive training in our fully equipped modern training shops and laboratory. Student receives practical instruction in Service, Repair and Installation on all types of equipment. Learn-by-Doing job experience supplemented by Training Films and classroom demonstration.

■ PLAN 2: HOME TRAINING

Instruction designed by Allied Institute engineering staff with the cooperation of leading manufacturers in the Air Conditioning and Refrigeration industries. Hundreds of detailed illustrations supplement text material. Trainee may attend two weeks resident training at no additional tuition charge.

For more than a quarter of a century Allied's specialized training has received universal approval as a service to American industry. Write today for free descriptive catalog and detailed information about the above Plans. Special attractive terms for the Industrial Sponsorship Plan.

Allied School of Mechanical Trades

■ ALLIED INSTITUTE OF TECHNOLOGY

1338-42 So. Michigan • Dept. CR-11 • Chicago, Ill.

following the procedure outlined in your manual.

Then shut off the oxygen or acetylene at the regulator. Take the faulty valve apart and clean the end of the valve and seat of the valve body. If there is any damage, return the part to your supplier.

Otherwise, reassemble the part, turn the valve on and off a few times, and tighten the packing nut with an open-end wrench. If the leak continues, take the blowpipe to your supplier for repairs.

Check your welding or cutting tips frequently to make sure that they aren't becoming clogged from use. Always clean your welding and cutting tips by hand, using clean drills of the correct size or a copper or soft brass wire of a suitable size. Don't use regular wood or metal drill bits to clean tips.

Normally, your blowpipe will not need any form of periodic maintenance or constant inspection, other than the points covered in this article. If other maintenance problems arise, consult the manual that you received with your outfit. If your manual makes no reference

to the repairs that you need, don't attempt to make them yourself. Return the outfit to your dealer for repair by qualified technicians.

CARRIER PHOENIX REP

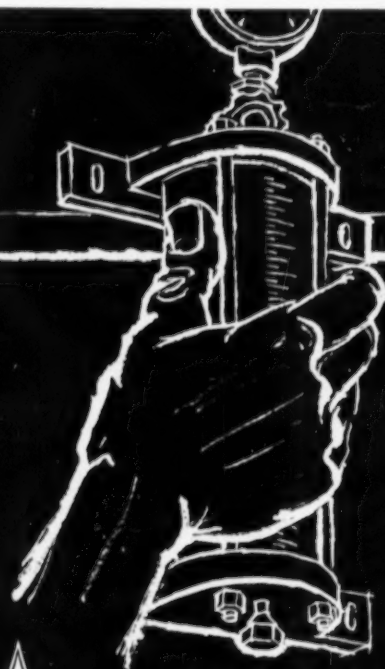
Appointment of the Valley Sheet Metal Co. as a Carrier Corp. applied equipment distributor in Phoenix, Ariz., has been announced.

The 16-year-old Valley firm is headed by Robert L. Bayless Jr. Bayless is a member of the Arizona Air Conditioning Contractors Association.

NAMED BY REMINGTON

Air Conditioning Div. of Remington Corp. has announced the appointment of John J. Wood Co. of New Orleans as room air conditioner sales representatives for Louisiana, southern Mississippi, the Mobile trading area, and the western tip of Florida. For the last several years, Wood Co. has been marketing heating equipment in this area.

YOU CAN MAKE "OFF-THE-SHELF" UNITS DO SPECIAL CHARGING AND DEHYDRATION JOBS



Save time and money . . . eliminate headaches. AIR-SERCO solves your charging, dehydration and leak testing problems—no matter how specialized. A wide range of applications is available.

Each AIRSERCO portable service station is available as a complete package or in individual "Off-The-Shelf" Units as follows:

- Kinney High Vacuum Pumps • Portable Dollys
- Precision Measuring Tubes • Vacuum Tight Manifolds
- 5 inch Closed-End Manometers

Send now for our brand new 1958 Refrigerant Handling & Measuring Equipment Catalog No. R-8. No charge.

AIRSERCO MANUFACTURING CO., INC. PITTSBURGH 13, PENNSYLVANIA, U.S.A.

Airserco has built more refrigeration testing equipment than any other company in the world.

Circle No. 104 on Reader Service Card

COMPRESSOR SHIPMENTS DOWN FOR HALF-YEAR

Manufacturers' shipments of compressor bodies during the first half of 1957 totaled 2,710,680, compared with 2,804,517 in the same period a year earlier, reports George S. Jones Jr., managing director of Air Conditioning & Refrigeration Institute.

Figures are based on reports to ARI by companies whose output is estimated to represent more than 95% of the total U.S. production. Household refrigerator compressor shipments are not included.

Manufacturers' Shipments of Compressor Bodies

(Except for household refrigerators)

Horsepower	Shipments Including Exports (number)	
	June, 1957	Jan.-June 1957
1/5 HP & Under	39,887	256,343
1/4 HP	63,687	416,628
1/3 HP	21,147	127,325
1/2 HP	10,677	57,057
3/4 HP	33,521	325,719
1 HP	66,997	719,723
1 1/2 HP	15,442	179,255
2 HP	21,024	163,150
3 HP	10,428	66,247
5 HP	8,706	49,906
7 1/2 HP	4,706	30,553
10 HP	1,026	7,233
15 HP	319	1,992
20 HP	243	1,327
25 HP	152	1,088
30 HP & Over	749	3,855
TOTAL	298,711	2,407,381
For Ammonia Refrigerant — Total	159	797
For Automotive Air-Conditioning — Total	44,899	302,502
GRAND TOTAL	343,769	2,710,680

While total shipments were below last year, 1 and 2 hp sizes were up sharply, as were those used in automotive air conditioning. The overall decline was about 3%, ARI reports.

Automotive air conditioning compressor body shipments this year were 302,502, against 167,487 for the first half of 1956.

Shipments of 2 hp compressor bodies jumped from 47,047 last year to 163,150 in the first half of this year; in the 1 hp size the gain was from 483,288 units in the 1956 period to 719,723 units this year. Smaller gains were shown in ship-

ments of 7 1/2, 10, 15 and 30 hp and larger units.

June shipments totaled 343,769 units, compared with 459,722 in June a year ago.

TERRY FIRM MOVES

Harry Terry and associates, consulting engineers of New York, have moved to new offices at 156 W. State St., Trenton, N. J. The firm specializes in air conditioning, heating, ventilating, illumination, electric wiring, plumbing, sanitary engineering, and allied engineering work for architects.

PACIFIC SCIENTIFIC IS NEW PENNSALT REP

Pacific Scientific Co. has been appointed to represent Pennsalt Chemicals Corp.'s new line of Isotron refrigerants.

From sales offices in Los Angeles, San Francisco, Portland, and Seattle, Pacific Scientific will service both the refrigeration replacement trade and the original charge industry in Washington, Oregon, Idaho, Montana, California, Nevada, and Arizona.

AMERICAN BLOWER OPENS NEW BRANCH OFFICES

American Blower Div. of American-Standard has announced the establishment of new branch sales engineering offices in Miami, Fla., and Mobile, Ala.

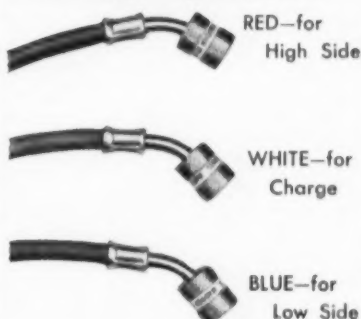
New Miami office, at 220 Miracle Mile, is managed by W. G. Harward. Leo S. Payne is manager of the Mobile branch, located at 461 Government St.

IACUCCI NAMED MANAGER

The A. R. Webber Co., 142 Orange Ave., West Haven, Conn., wholesalers of heating, refrigeration and air conditioning supplies and equipment, has announced the appointment of George Iacucci as manager of the company's refrigeration and air conditioning department. Iacucci has been associated with the refrigeration and air conditioning supply business for 10 years.

Circle No. 94 on Reader Service Card

MADDEN introduces Color Coded Charging Lines



SET OF THREE **\$5.95**

- Color coding makes servicing easier, simplifies work in close quarters.
- Packaged in Dustproof Polyethylene Bag.

SEE US AT THE SHOW
Booth 655



MADDEN BRASS PRODUCTS COMPANY
AURORA 2, ILLINOIS, U.S.A.
EXPORT: Ad. Aurora 85 Broad St., New York, N. Y.

DISSOLVE SCALE FASTER with ANCO Condenser Cleaner

ANCO condenser cleaner removes scale from condenser tubes and circulating lines quickly and harmlessly. Simply dissolve ANCO Condenser Cleaner in the sump while the system is in operation. Within hours you lower head pressure and restore maximum operating efficiency to the condenser.

ANCO WATER TREATMENT

Keeps scale from forming in condenser tubes, circulating lines, and protects metals from rusting.

Anco Algacide Kills algae and slime in cooling towers and evaporative condensers.



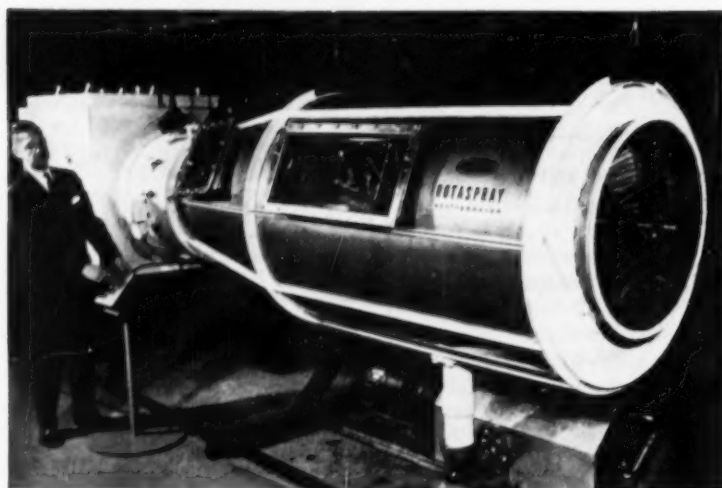
For all ANCO Products, see your wholesaler or write direct



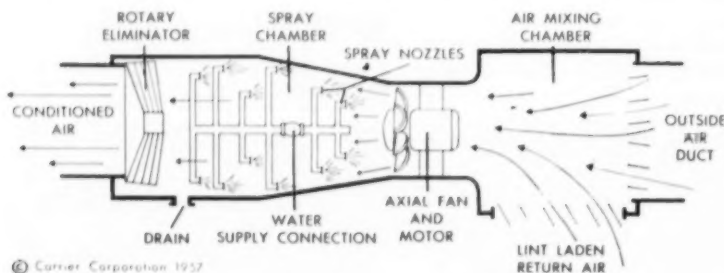
Anderson
Chemical Company, Inc.
Box 1424 • Macon, Georgia

Circle No. 105 on Reader Service Card

SPACE-SAVING CARRIER UNIT COOLS PLANT



ONLY ONE-THIRD the space of present-day equipment is required for Carrier's new industrial plant air conditioning device. Shown manning the controls of the "Rota-spray Weathermaker" is Hermann Hoffmann, general sales manager. Below, operational drawing. Rotating eliminator wheel halts water droplets and foreign particles, yet passes conditioned air freely. Water carrying sodden lint and dust drains to common collection tank where waste material is separated from moving belt filter. Water then is recirculated to air conditioner. Spray nozzles with orifices capable of expanding to twice their normal size will not clog up, manufacturer claims.



© Carrier Corporation 1957

CARRIER ANNOUNCES NEW LARGE INDUSTRIAL UNIT

A new system for air conditioning large industrial areas has been announced by Carrier Corp.

Key features of the system is a new spray-type air conditioning unit, described as "the first major change in central station conditioning apparatus in nearly half a century." The central conditioner is said to take only one-third the space of present equipment, provide more accurate control of humidity, and virtually eliminate system cleaning and maintenance.

This new system is expected to obsolete conventional textile mill air conditioning equipment, according to Charles V. Fenn, vice president of the firm.

The new device, called the "Rota-spray Weathermaker," is design-

ed for overhead installation occupying waste space.

A new "spin-dry" principle removes water droplets, lint, and other foreign matter.

Using a rotating eliminator, it will operate at air velocities up to 2,400 fpm. This is about four times the highest velocity possible with spray apparatus currently in use, Fenn said.

The eliminator's rotating motion constantly throws off soaked particles by centrifugal force, thus making it completely self-cleaning.

A major cost reduction provided is the elimination of the many manhours required to clean conventional systems. A two-year period of field tests has proven that it cuts cleaning and maintenance to an absolute minimum. One unit in daily operation for

almost a year has required no attention, he said.

The unit is produced in four sizes with capacities in the range from 10,000 to 30,000 cfm. Overall dimensions range from 3 to 6' in diameter and from 16 to 23' in length.

BOOK REVIEW

"The Freezing Preservation of Foods" (3rd Edition), in two volumes. Volume I: "Freezing of Fresh Foods", 1250 pages, 282 illustrations. Volume II: "Freezing of Precooked and Prepared Foods", 550 pages, 125 illustrations.

Authors: Donald K. Tressler and Clifford F. Evers.

Price: per set, \$26. Volume I only, \$18; Volume II only, \$10.

Publisher: Avi Publishing Co., Inc., Westport, Conn.

Its two previous editions have established this book as an authority in its field, and the new edition should certainly add to its stature. Mirroring the spectacular growth of the frozen foods industry in the last 10 years, the book is now in two volumes. All existing chapters have been rewritten, and nine completely new chapters have been added to Volume I. Volume II is the first comprehensive book that has been written about a relatively new branch of the frozen food field.

The volume on freezing of fresh foods covers (in 31 chapters) subjects ranging from basic data on the field's importance and potentials to the importance of quality control in all stages from farm to freezer. New chapters of particular interest to refrigeration men are those covering the warehousing, marketing, and transportation of frozen foods, retail frozen food cabinets, and the freezing of fruit juice concentrates.

Volume II, covering precooked and prepared foods, traces the development of this growing branch of food freezing, and treats the problems encountered in the preparation, processing, storing and marketing of these products. Details of the preparation and freezing of all principal types of precooked and prepared foods are discussed in individual chapters. Special chapters are devoted to the storage of pre-cooked frozen foods and to their handling and use, and to the use of frozen foods by public feeding establishments.

In preparing the two volumes, the authors had the assistance of 130 food technologists, including representatives of U. S. Dept. of Agriculture, National Restaurant Assn., and National Dairy Council.

AIR CONDITIONING IN SCHOOLS ON RISE

School air conditioning, already established in the southwest, is spreading rapidly in the north and east, educators, architects and engineers were told recently.

Future economies in school construction and operation are behind the growing trend to provide for "future cooling" in the design of classroom buildings, according to Charles S. Stock, American Air Filter Co., Inc., Louisville, Ky., sponsor of a school air conditioning conference at the Belmont Plaza hotel, New York City.

Factors contributing to the air conditioned school trend are increasing summer school enrollments in high schools, teachers' colleges and universities, and increasing use of audio visual equipment, including closed-circuit television, in all school levels, Stock reported.



Completely air conditioned schools are occupied, or under construction in Schenectady, N.Y., Alton, Ill., Jal, N.M., Phoenix and Tucson, Ariz., and Los Angeles, Calif.

Air conditioning systems designed for future addition of chilled water central cooling are occupied, or under construction, in Lodi, Fresno, Lancaster and Bakersfield, Calif., Denver, Colo., Mesa, Ariz., Owensboro, Ky., Gary, Ind., Skokie, Ill., and Dubuque, Iowa.

Future air conditioning of school district offices has been incorporated in the plans for Sanford Calhoun High School, Merriick, (L.I.), N.Y.

Harper Creek, Mich., a suburb of Battle Creek, recently revised its high school plans to provide

for future air conditioning in 22 academic classrooms and administrative offices. Howard Nunn, superintendent of schools, when he ordered the revisions, said he wanted to "be prepared for air conditioning because the building would otherwise be obsolete in five years."

Stock reported that more than 20 school districts in the north and east are considering providing for either future cooling or immediate air conditioning in their present architectural plans.

"Provision for future classroom cooling adds only about 1 or 2% to the total cost of school buildings in the northern climates, where controlled mechanical ventilation systems are generally accepted as standard in school construction," Stock said. "Ultimate addition of central refrigeration systems to chill water for summer air conditioning represents as little as 4 or 5% of the total construction cost. This is modest, when the increased usefulness of the school buildings in the summer months is considered."

Circle No. 107 on Reader Service Card



**MULTIPLE CIRCUIT
AT NO ADDITIONAL COST**

**Positive Automatic Control
System For Winter Operation**

The most complete air cooled condenser line offered. **BLADE FAN TYPE** in capacities from 2 to 40 ton for commercial and heavy industrial installations. **WHEEL TYPE BLOWERS** from 2½ to 15 ton for residence, hospital or any place where utmost in quietness is necessary.

Where water supply is taxed or limited, or water corrodes water cooled condensers, the sensible answer to your air conditioning or refrigeration condensing problem is a **WITT AIR COOLED CONDENSER**.

Same units applicable for indoor or outdoor installation. Outstanding results and the price is unbelievably low.

WOULD YOU LIKE A CATALOG?

A. H. WITT COMPANY, Inc.
940 North Sycamore Ave.
Los Angeles 38, Calif.

ONE OF A
FINE LINE
OF
WITT Coils

**YOU NEED
NO EXTRA
FLOOR
SPACE!**

New SCHMIDT

**OUTDOOR, WALK-IN
"spacemaker"**

**Boost your profits
with the new
SPACEMAKER
series . . . meet
every budget
need! Write for
new comprehensive
catalog No.
WIC-11.**

Visit our Booth No. 224 at the Air Conditioning & Refrigeration Show, Nov. 18-22, Chicago.

THE C. SCHMIDT COMPANY
1712 John St., Cincinnati 14, Ohio



- Coolers, Two-Temp and Freezer Models
- Outdoor or Indoor
- Sectional Construction for Custom-Built Refrigerated Storage
- Sanitary, All Metal

Manufacturers Expand Foreign Operations

DUNHAM-BUSH ACQUIRES BRUNNER CORP., CANADA

Cecil Boling, president of Dunham-Bush, Inc., has announced the acquisition of Brunner Corp. (Canada) Ltd., through the purchase of all outstanding shares from Robert Elder Ltd., Toronto.

Brunner Corp. Ltd. will be operated as a wholly-owned subsidiary of Dunham-Bush. The factory will remain at Port Hope, Ontario, but the offices will be moved from the present Toronto location to that of Dunham-Bush Ltd., Toronto.

R. M. Mitchell, president of Dunham-Bush Ltd., has been elected president of Brunner Corp. Ltd., and Ralph Long, formerly general manager of Brunner Corp. Ltd., has been elected vice president and general manager.

Dunham-Bush now offers a complete line of air conditioning, refrigeration, and heating equipment in Canada.

* * *

McCray Licenses Australian Firm

McCray Refrigerator Co. has licensed D.G.M. Refrigeration Ltd., of Sydney, Australia, to manufacture and distribute products of McCray design in Australia and New Guinea. Foster Cortis will be in charge of the development for the Australian firm.

* * *

Ranco Establishes Italian Subsidiary

Ranco Inc., has organized a new wholly-owned Italian subsidiary—Ranco Italiana S.p.A. — A. M. Hoover, president of the firm, announced recently.

The new firm, with an initial capitalization of 225,000,000 lira, will be located in Italy's northern industrial section. Production of refrigeration controls and compressor rotor and stator units, principally for the Italian market, will begin early this fall.

Norman Best will serve as president and director of Ranco Italiana

S.p.A. Other officers and directors will include: Yorick Spolidoro, vice president and director; A. M. Hoover, Howard A. Lewis and Dr. P. Sella, directors; Gian Giacomo Berra, general manager; S. Vallice, accountant; and Robert Shanks, factory manager. Best is general manager of Ranco Ltd., Scotland; Lewis is a director of Ranco Inc.

* * *

Pennsalt Forms Canadian Subsidiary

Pennsalt Chemicals Corp. has formed a wholly-owned subsidiary in Canada. The new component will be known as Pennsalt Chemicals of Canada, Ltd. William B. Billingsley, who has directed Pennsalt specialty sales in Canada since 1954, has been named vice president of the new subsidiary and resident manager of its operations.

* * *

McCray Co. Licenses German Manufacturer

McCray Refrigerator Co., Inc., Kendallville, Ind., and Eisfink Co., Asperg, Germany, have signed an agreement licensing the latter firm to manufacture products of McCray design and granting it selling privileges all over the world except in Australia, New Guinea, and on the North American Continent. J. W. Krall, president of McCray, represented his firm, and Erich L. Fink, represented Eisfink.

ASHAE Announces Heat Transmission Study

Heating and air conditioning engineers interested in the measurement of heat transmission through light-transmitting materials under sun exposure now may arrange to have this type of study conducted.

According to American Society of Heating and Air-Conditioning Engineers such solar energy studies require special laboratory facilities. In order to find out where this research might be conducted the Society's Technical Ad-

visory Committee on Heat Transfer Through Fenestration surveyed a number of organizations.

R. W. McKinley, Pittsburgh, committee chairman, says the inquiry revealed there are at least 12 institutions interested in discussing such research programs with potential sponsors. Their facilities vary widely.

The interested organizations are Battelle Memorial Institute; Columbia University; Duke University; Cornell University; University of Maryland; University of Michigan; University of Minnesota; Pennsylvania State University; New York University; Purdue University; Rensselaer Polytechnic Institute; and Southern Methodist University.

Book Covers Induction System Balancing

A new manual for contractors outlining the proper method of balancing Induction UniTrane air conditioning systems is available from Trane Co.

Developed for use in multi-room buildings, this system is best suited to conditioning of perimeter areas of buildings. The system is designed to maintain comfort conditions the year around, regardless of variations in sun, artificial light, or occupant load.

The new bulletin uses photos, copy, and graphs to describe the step-by-step balancing procedure.

Contractors or engineers can obtain a copy of the bulletin, "Balancing the Induction UniTrane System," by writing on their firm's letterhead to Trane, La Crosse, Wis., for Bulletin D-425B.

McQuay Names 2 Agents

McQuay, Inc., has appointed two new representatives for its heating and air conditioning products. R. K. Goode Co., New Orleans, has been named for that territory. Alexander Mitchell Co., Albany, N. Y., will be representative for central and eastern New York State, and Vermont.

BUY FROM YOUR
REFRIGERATION WHOLESALER

PERFECTION NAMES 5

Five new distributors for its air conditioners and heating equipment have been appointed by Perfection Industries, Div. of Hupp Corp. They are:

Furnace Supply Co., Birmingham, Ala.; Noland Co., Augusta, Ga.; D. N. Latus Co., Helena, Mont.; Endicott Co., Philadelphia; and J. George Fischer & Sons, Saginaw, Mich.

BOOK REVIEW

Title: Engineering Thermodynamics, 428 pages.

Author: C. Osborn Mackey

Publisher: John Wiley & Sons, Inc., New York, N. Y.

Price: \$7.95.

Fundamentals of heat and power engineering are treated in this textbook, which supercedes *Heat Power Engineering* by William N. Barnard, Frank O. Ellenwood, and Clarence Hirshfeld.

Principles laid down include properties and processes of real gases as well as general thermodynamic equations. Applications stressed show influence of recent developments in their treatment of one-dimensional flow of ideal gases with area change, friction, and heat transfer; properties of mixture of ideal gases; ideal gas reactions; energy transformations in turbines; power cycles with real fluids; and other topics.

Publication is influenced by increased importance of turbo-machinery. Centrifugal compressors and axial-flow compressors are included along with conventional study of cycles of reciprocating compressors. Utilization of combustion charts is covered, in addition to "air standard" cycles.

A discussion of power cycles of vapors deals with the reheating cycle, regenerative cycle, and the two-fluid cycles that have been proposed for use in nuclear power plants.

Book contains over 300 problems and answers.

REP FOR TOT TOWERS

Appointment of the Authorized Refrigeration Parts Co. of St. Louis, as wholesale distributor for eastern Missouri and western Illinois is announced by Tot Towers, Inc., Houston, Tex. The firm will handle the complete line of atmospheric and mechanical cooling towers.

HANDLES DRAYER LINE

A new sales representative, S. C. McCann Co., Kansas City, in the western Missouri-Kansas sector for Drayer-Hanson, has been appointed. The firm is headed by owner S. C. McCann.

TRION REP IN PHOENIX

Trion, Inc., manufacturers of electronic air cleaning equipment, has announced the appointment of a new representative for its commercial and industrial units. The new representative is Norman S. Wright & Co., Phoenix, Ariz.

PARKER TO REPRESENT MARCO INDUSTRIES

The Joe E. Parker Co., Atlanta, has been appointed southeastern sales representative for Marco Industries, Inc., manufacturer of fractional horsepower motors.

Parker will represent Marco in Alabama, Florida, Georgia, Mississippi, North and South Carolina, Tennessee and Virginia.

Circle No. 109 on Reader Service Card



Complete outfit, \$84.50

For Quicker Installations

PREST-O-LITE Oxy-Acetylene

Trade-Mark
Welding and Cutting Outfit

PORTABLE—Light and compact. Take it anywhere—use it anywhere.
MODERN—Exclusive new blowpipe welds, cuts, and brazes. Just change the tip. No attachments or "extras" to buy.

HANDY—Small and easy to use. Always ready.

VERSATILE—Welds sheet and light plate; cuts easily through heavy steel. Changes over simply and quickly.

Oxygen and acetylene readily available in cylinders sized to meet your exact needs.

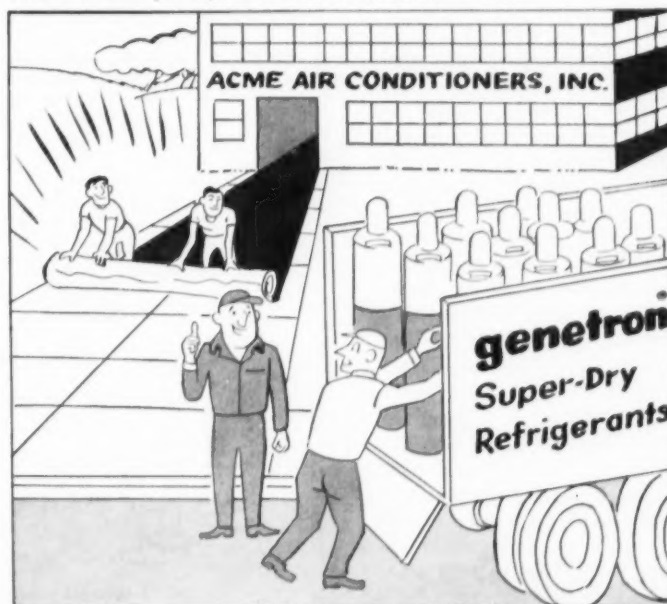
Write today for free booklet and name of nearest distributor.

"Prest-O-Lite" is UCC's trade-mark.

LINDE COMPANY

Division of Union Carbide Corporation
30 East 42nd Street **UCC** New York 17, N. Y.

WIN A PRIZE! Send your cartoon suggestions on the subject of "Genetron" Super-Dry Refrigerants to: "Genetron" Dept., General Chemical Division, Allied Chemical & Dye Corporation, 40 Rector Street, New York 6, N. Y. WE WILL PAY \$10 for every cartoon idea used and print your name and address.



They're really happy about the performance they get with **genetron**® Super-Dry Refrigerants!

Circle No. 108 on Reader Service Card

NATIONAL-U.S. BUILDS RESEARCH CENTER



ARCHITECT'S RENDERING is shown of the proposed new Research Park Engineering Center of National-U.S. Radiator Corp., at Johnstown, Pa. The one million dollar building will be devoted to research and development work on home and industrial space heating and air conditioning in addition to heat exchanger equipment and boiler testing. Completion is expected early in 1958.

RACCA-NATIONAL ADDS 3RD LOCAL ASSOCIATION

The membership committee of RACCA-national has reported receiving application from RACCA of Southern California late in June and an application from the Air Conditioning Contractors Association of Denver, Colo. in August.

Now the Cleveland office of the Refrigeration and Air Conditioning Contractors Association-national reports a new chapter has applied for membership from the state of California.

The application is from the Inland Air Conditioning and Refrigeration Contractors Association, Inc., with headquarters at Riverside. The following companies make up the membership of this group of contractors, who operate in the San Bernardino and the Riverside areas:

Air Handlers, Baar Sheet Metal Works, Bunker Refrigeration, Burgeson's Heating & Air Conditioning, Commercial Refrigeration Service Co., Fulmor Air Conditioning Corp., Refrigeration Equipment and Supply, Riverside Refrigeration, Henry A. Simsarian, Superior Refrigeration, Tri City Climate Control Co., Utility Heating & Cooling, Wingate Electric.

Henry B. Ely, secretary of this local association is also the executive secretary of the recently affiliated RACCA of Southern California.

REPRESENTS RESEARCH IN MOUNTAIN AREA

Western Sales Service, of Denver and Salt Lake City, has been named representative for Research Products Corp. in Colorado, Utah, Wyoming, Montana and southern Idaho. The company has offices at 407 Phillips Petroleum Bldg., Salt Lake City, and 5454 E. Utah Place, Denver.

Principals of the company are W. E. Gnadt, Kenneth P. Gnadt, and B. W. Kitley.

BUY FROM YOUR REFRIGERATION WHOLESALER



MERCURY APPOINTS 3 NEW DISTRIBUTORS

Appointment of three new distributors has been announced by the Mercury Air Conditioning & Heating Div. of Lord and Palmer, Inc., Belding, Mich.

Harris Supply Co., Grand Rapids, Mich., will service 30 counties in the western Michigan trading area; Famous Furnace Co., Cleveland, will cover north-eastern Ohio and parts of West Virginia and Pennsylvania; and Kleinman Brothers, Inc., Baltimore, will serve the eastern Maryland trading area.

RECOLD APPOINTS BOYD

Boyd Engineering Co., Inc., has been appointed a distributor of the Recold Corp. to handle air conditioning products. The two companies both are celebrating their silver anniversaries during this year.

DISTRIBUTOR IN N. J.

Tri-State Equipment Co., Prea-kness, N. J., has been appointed a distributor for Recold Corp., announces H. T. (Hy) Jarvis, Recold president.

Tri-State, owned by W. I. Freeman Jr., will handle both air conditioning and refrigeration products for Recold.

Assistants to Freeman are J. A. Keller and G. A. Freeman.

INSTANT-ICE MACHINES

**SOME CHOICE
TERRITORIES
OPEN!**

The most complete
line . . .

14 MODELS!

Production ranges from 600 lbs. to
5000 lbs. per 24 hours. Air-cooled,
water-cooled. Self-contained and re-
mote models.

**THE HIGHEST QUALITY
LINE!**

Precision-built . . . sold on quality,
convenience and dependability.

WRITE NOW!

for complete details . . .

**LIQUID FREEZE
Corporation**

1133-24th ST • OAKLAND, CALIF.
Templebar 6-0424

ATTENTION TOURISTS!



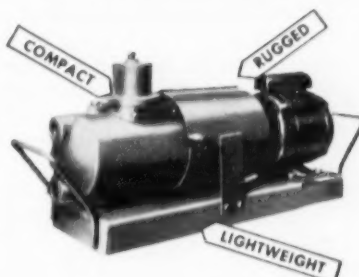
TOUR OF INSPECTION is made by
Geo. S. Jones Jr., managing director
of Air-Conditioning and Refrigeration
Institute, as he boards D. C. Transit Co.'s
new air-conditioned "Silver Sightseer"
trolley car. It's designed to carry Wash-
ington tourists along the company's
lines past some of the Capital's points
of interest and to serve as a prototype
for possible future air-conditioning of
transit vehicles. The car has four, two-
ton air-conditioning units.

COPELAND APPOINT REP.

Copeland Refrigeration Corp.
announces the appointment of W.
H. Kiefaber Co., Dayton, Ohio, as
its wholesaler. Kiefaber replaces
Allied Supply Co.

for
DEHYDRATING
and
TESTING . . .

BEACH-RUSS Portable VACUUM PUMPS



Beach-Russ Portable Vacuum Pumps
are designed specifically for dehydrat-
ing and testing refrigeration and air
conditioning units. These high per-
formance, quiet operating, portable
pumps are available in two sizes:

- Model A Two-Stage Pump— $\frac{1}{10}$ mm.
vacuum, blank flange, 2.5 cfm,
 $\frac{1}{2}$ HP, weight 80 lbs.
- Model O Single-Stage Pump—1
mm. vacuum, blank flange, 1 cfm,
 $\frac{1}{8}$ HP, weight 48 lbs.

Beach-Russ Vacuum Pumps are also made in
types and sizes for evacuation and testing of
refrigeration equipment on a production basis.

Are you getting the lion's share?



There's a huge portion of meaty information between the
covers of each issue of Commercial Refrigeration & Air Conditioning.
Make sure you've gotten the most out of this one before you pass
it along. Leaf through it again, particularly noticing things
like *New Products* and *Useful Literature* (see listings on
Contents page). If you need details on any of them, the
Reader Service Card will bring them.

BEACH-RUSS COMPANY

50 Church St., New York 7, N. Y. Dept. 56

Send descriptive
literature covering

☐ Model O Single-Stage
Vacuum Pumps

☐ Model A Two-Stage
Pumps.

Name _____

Company _____

Address _____

City _____ Zone _____ State _____

BEACH-RUSS CO.

50 Church St., New York 7, N. Y.

Circle No. 110 on Reader Service Card

ASRE PROGRAM...

Continued from page 96

Near Room Temperature", by Profs. T. Gier, R. V. Dunkle and J. T. Bevans, University of California; "Removal of Ice Film from Metal Surfaces", by Prof. W. E. Fontaine, University of Minnesota; and "Influences of Insulation on Moisture Condensation Aspects of a Steel Framed Cold Storage Warehouse Structure", by Prof. Carl F. Kayan and Robert G. Gates, Columbia University. S. J. Williams will be session chairman.

Second conference, on refrigeration and meat packing, is set for 2:30 p.m. on Nov. 14. Chairman will be H. A. Stevens, Swift & Co. Technical session scheduled for the same period will have R. A. Line, Hussmann Refrigeration, as chairman, and will include papers on: "Hermetic Motor Speed Indicator", by W. W. Sutherland, Westinghouse Electric Corp.; and "Simple Moisture Indicating Device for Refrigerating Systems", by W. A. Krause and A. B. Guise, Ansul Chemical Co.

Two conferences are scheduled for the 9:30 a.m. session on Friday, Nov. 15. The first, on air conditioning, will be chairmanned by W. L. McGrath, Carrier Corp. The second, on food preservation, will be headed by H. C. Diehl, Refrigeration Research Foundation.

Speakers at this latter session will include D. K. Tressler, USQMC Food & Container Institute; W. M. Urban, Swift & Co.; M. J. Copley, Western Research & Development Div., Agricultural Research Foundation; L. E. Clifford, American Can Co.; and W. T. Pentzer, Biological Sciences Div., Agricultural Marketing Administration.

Afternoon meeting on Nov. 15 will include forums sponsored by the ASRE general technical committee. Subjects covered will be:

"Refrigeration in Candy Manufacture", J. F. Woodruff, Georgia Experiment Station; "Automatic Operation of Refrigeration Plants", D. A. Parkhurst; "ASRE and Industry's Part in Creating

More Interest in Refrigeration Education", M. K. Fahnestock, University of Illinois.

"The Problems of Correct Installation of Residential Air Conditioning", "Compressor Ratio and Discharge Temperature Limits", and "Small Truck Refrigeration Equipment" also are topics.

With C. O. Hutchinson, Glidden Co., as chairman, the 9 a.m. session on Saturday, Nov. 16 will hear papers on "Greenhouse Climate Control" by R. S. Ash, International Metal Products Co.; "Permeability of Plastics Films to 'Freon' 12 and Nitrogen", by H. M. Parmalee, E. I. du Pont de Nemours & Co.; and "Air Cycle Air Conditioning the B-47", by G. E. Gregg, Boeing Aircraft Company.

RSES PROGRAM...

Continued from page 96

A two-hour "Information Please" panel session will start the Sunday, Nov. 17, 9 a.m. educational program. Following this long-popular RSES feature, Bryant L. Britt, manager, Electrical Service Dept., Wagner Electric Corp., will explain "The Repair and Rewinding of Motor Stators for Hermetic Sealed Units".

Sunday afternoon session, beginning at 1 p.m., will include four talks:

"Application and Servicing of High Vacuum Pumps in the Air Conditioning and Refrigeration Industry", by H. G. Saunders, assistant to the sales manager, Kinney Mfg. Div., New York Air Brake Co.

"What a Super Market Operator Expects of a Service Contractor", by W. H. Longenbaker, director, Store Engineering Dept., Independent Grocers Alliance.

"Centrifugal Water Circulating Pumps, Piping Design and Service", by Harry Barclay, assistant manager, Industrial Div., Bell & Gossett Co.

"Labor-Saving Tools and Instruments", by A. E. Manning, RSES officer and vice president of Kelmor Corp., Newark, N. J.

Program on Monday morning, Nov. 18, except for an hour of "Information Please", will be oc-

cupied with RSES business matters, including committee reports and election of 1958 officers. Adjournment will be in time to allow members to get to the International Amphitheatre for the opening of the ARI Exposition.

The "all-industry" RSES banquet and entertainment will begin at 7 p.m. Tuesday night in the Terrace Casino. Herman M. Goldberg will be master of ceremonies for the post-banquet entertainment.

Two papers are scheduled for presentation at the 9 a.m. session on Tuesday, Nov. 19, which again will be opened with an "Information Please" panel.

"Heat Pumps for Residences" will be discussed by R. P. Cook, head of the engineering department of Typhoon Heat Pump Co., Tampa, Fla., and "Air Distribution Problems and What a Service Engineer Can Do to Help Overcome Them" will be outlined by F. G. Honerkamp, chief of engineering and design development for Anemostat Corp. of America, New York City.

Annual luncheon and meeting of the Manufacturers Service Managers Club will be held at noon on Wednesday, Nov. 20, in the Clark Room of the Morrison. National service managers of all manufacturers are invited.

RACCA PROGRAM...

Continued from page 97

Newly elected directors will meet at 3 p.m. to elect officers and appoint 1958 committee chairmen.

No general meetings are scheduled for either Nov. 18 or 19 because of the ARI Exposition. Free hourly bus service to the Show, leaving from the Oak St. entrance of the hotel, is being provided by the Chicago association.

General session Tuesday, Nov. 19 at 9:30 a.m. will cover management subjects in an open forum discussion moderated by Harvey O. Miller, first vice president. Topics will include leasing of equipment, maintenance contracts, profit-sharing plans, and a survey of national averages developed in a recent RACCA survey.

Annual business luncheon will

be held at noon, with convention chairman W. L. Long presiding. Presentation of awards will be made by second vice president Armand Cowan, and past president Arthur M. Palen will convey RACCA's thanks to outgoing officers and directors.

"Chuck" Hanna, Chicago humorist, will describe "A Fate Worse Than Debt". The meetings will close with introduction of incoming officers and new committee chairmen, and a message from the president-elect.

NCRSA PROGRAM...

Continued from page 97

"Locating, Designing and Engineering the Store of Tomorrow" will be presented by Ralph E. Ernst, Modern Stores, National Association of Retail Grocers, Chicago. A. B. Biddle, executive vice president of Hussmann Refrigeration, will discuss "Equipping the Store of Tomorrow for Maximum Sales". Closing the panel talks will be "Financing the Store of Tomorrow" by Milton I. Schwartz, executive vice president of S. & M. Schwartz & Co., Div. of Straus-Duparquet, New York City.

A question-and-answer period developed by the talks will close the Monday afternoon meeting.

Annual NCRSA reception and banquet will be held Monday night, beginning at 6:30 p.m.

A film on "Produce Packaging" prepared by du Pont will start off the morning meeting on Tuesday, Nov. 19.

"Putting Life into Our Product—the Distributor's Responsibility", will be presented by George F. Wiedemer, of Cable-Wiedemer, Rochester, N.Y.

George A. Lucas of Allied Store Engineering Co., East Hartford, Conn., will tell "How Our Salesmen Can More Effectively Sell Our Services to the Customer". To close the session, Karl O. Nygaard, director of research for B. F. Goodrich Co., will talk about "Crystal Balls, Witchcraft and Hot Coffee".

A panel session, "If I Were a Manufacturer", with three NCRSA

Continued on next page

Circle No. 112 on Reader Service Card

Why Destroy
expensive equipment by using
destructive cleaners?

ULTRA SOLVEX

**lowers high head
pressure quickly
and safely—**



Meet us at Booth 263, 10th
Exposition Air Conditioning
and Refrigeration Industry,
November 18-21... International Amphitheater,
Chicago.

SAFE

Ultra Solvex will not harm operator or system when used as directed. Ultra Solvex does not destroy metals as do strong acids.

EFFECTIVE

Ultra Solvex disintegrates scale, rust, algae and other deposits in plumbing, heating, air conditioning and refrigeration systems.

FAST

No scraping or reaming is necessary. Ultra Solvex cleans by safe chemical disintegration of deposits. Long shut-downs are unnecessary.

P. O. Box 487

For full information, see your wholesaler or write:

Birmingham, Alabama

CHEMICAL SOLVENT CO.

3005 16th Street, North

Birmingham, Ala.

FLEXON VIBRA-SORBERS®

give you
**VALUE
PLUS**



- + **HIGH QUALITY SPECIAL BRONZE ALLOY**—98.75% copper, 1.25% tin, assures maximum resistance to fatigue under constant flexing and vibration.
- + **LISTING BY UNDERWRITERS' LABORATORIES** in sizes $\frac{3}{16}$ x $1\frac{1}{2}$ " for high and low side service.
- + **HIGHEST CLEANLINESS STANDARDS** prevent foreign matter being brought into system. Vibra-Sorbers come in sealed polyethylene bags.
- + **APPROVED BY MAJOR MANUFACTURERS**—the standard of the industry as original equipment.
- + **NEATLY PACKAGED AND LABELED** for easy, convenient stocking for distributors, jobbers, etc.

Write for Bulletin 139.

**NOW
AVAILABLE
FROM
FLEXONICS**

Flex-O-Tube synthetic Freon-resistant hose for refrigeration and air conditioning service. Also, flexible metal connectors for circulating pumps. Write for information.



Flexonics Corporation

1321 S. Third Avenue
Maywood, Illinois

Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.

In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

V 26

Circle No. 113 on Reader Service Card

members as principals, will highlight the Tuesday afternoon meeting.

"Why I Would Sell Through Distributors" will be explained by Dudley M. Cawthon of Dudley Cawthon Inc., Miami; and Ray Winther, of Ray Winther Co., San Francisco, will tell "What I Would Do to Teach My Distributors to be Good Distributors".

George Schoenbacher of Red-E-Cold Refrigerator Co., Chicago, will outline why "I would Offer Distributors a Well-Rounded Sales Policy"; and Jack Thurman, of Pritchett-Stephen Refrigeration Co., Ft. Worth, will describe "How I Would Help to Sell My Distributors' Services to Our Customers".

Reports of the joint distributor-manufacturer relations committee and of the nominating committee will be followed by election of officers for 1958. Introduction of new officers and final business affairs will wind up the program.

NWAHACA PROGRAM ...

Continued from page 97

Afternoon session will lead off with a case history report on "Quality System Can be Sold", by the team of C. C. Owen, assistant sales manager, Janitrol Heating & Air Conditioning Div., Columbus, Ohio; George E. Adema, N. M. Adema & Sons, Buffalo; and Marvin L. Phillips, Jenny Service Co., Dayton, Ohio.

"Give Them Time" will be presented by the manufacturer-dealer duo of Dean Dewitt, credit manager and assistant to general manager, Lennox Industries, and Clarence C. Guenther, Air Way Heating Co., Denver.

Fred Weldon, sales manager, General Controls, Skokie, Ill., will talk about "Adding for Added Profits"; and "There's Profit in Engineering" will be presented by the distributor-manufacturer team of J. P. Montonye, Indoor Comfort Corp., Ypsilanti, Mich., and Don Wingardner, sales manager, the Majestic Co., Huntington, Ind.

Morning meeting on Friday, Nov. 22, will open with a talk on "Standardize Your Jobs for Prof-

it" by J. S. McDonald, vice president and sales manager, the Excelsior Steel Furnace Co., Chicago.

"Profit Through Better Buying Habits" will be discussed by a panel of three Columbus, Ohio men: W. E. Favret, the Favret Co.; A. J. Pataky, Adam-Lusch-Schill Furnace Co.; and N. T. Hess, Vorys Bros., Inc.

Closing panel, "Capitalize for Larger Profits", is scheduled to have as participants J. A. Reichert, the Decker-Reichert Steel Co., Cleveland; and E. H. Roberts, E. H. Roberts Co., Elyria, Ohio.

YORK CORP. APPOINTS 2 NEW DISTRIBUTORS

York Corp., subsidiary of Borg-Warner Corp., has appointed two new distributors.

Warren Connolly Co., Inc., New York, has been named distributor of room air conditioners. York Distributors, Inc., Long Island City, wholly owned subsidiary of Borg-Warner, has been appointed the wholesale distributor of residential air conditioners and commercial ice-making equipment.

YATES-AMERICAN FORMS NEW SOUTHERN BRANCH

Yates-American Machine Co. has consolidated its High Point, N. C., and Memphis, Tenn., branch offices. The new branch is located at 532 Plaster Ave., Atlanta, Ga.

Offices also are maintained in Portland, Ore., and Chicago.

SERVEL COMPLETES SALE OF A/C DIV. TO ARKLA

Servel, Inc., has completed the sale of the properties and assets of its All-Year Air Conditioning Div. to Arkla Air Conditioning Corp., wholly owned subsidiary of Arkansas Louisiana Gas Co., Shreveport, La.

This transaction was approved by Servel stockholders recently at a special meeting in Dover, Del. The sale later was finalized with the signing of legal papers and the payment of approximately \$4 million by the purchasers.

The sale included the entire

business, property, and assets (other than accounts receivable) of the All-year Div., and the building of the Defense Div. — a total of 14 acres of land and several buildings with 478,000 sq. ft. of floor space.

AIRTEMP LISTS MORE CHANGES IN SALES DIV.

Further reorganizational changes of Chrysler Airtemp sales division have been announced by J. F. Knoff, sales vice president.

These changes include the creation of several new home office and field posts.

The following home office appointments have been made: manager-dealer development commercial-residential air conditioning and heating, J. A. Clarke; manager-dealer development room air conditioners, H. A. Dillon; and manager — technical services, J. C. Davidson.

The three managers will be members of the staff of Sydney Anderson Jr., director of zone operations. Supervisors of dealer-development have been named for each of the company's five new zones. They are: northeast, E. O. Butler and R. J. Link; southeast, W. L. Regan; mid-central, Dean Parke and L. C. Smith; southwest, J. J. McMahon; and west coast, R. H. Friedel.

Dealer development specialists also have been named for each zone. They are: northwest, W. F. Poller, R. E. Nutting, H. L. Kerr, and L. W. Barron; southwest, G. W. Lunsford, E. F. Voss, and C. H. Stephan.

Mid-central, B. P. O'Donnell, C. J. Otis, J. J. Casey, J. P. Kelley, A. B. Moore, and J. G. Blackmon. Southwest, R. B. Hamilton, J. L. Floyd, K. P. Whitney, and M. E. Barker; and west coast, G. B. Sharkey, P. B. Lockwood, and M. L. Franzel.

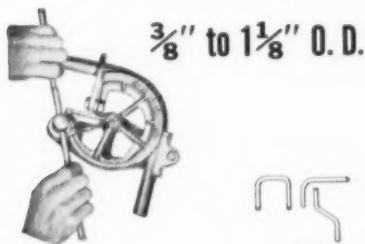
TRANE CO. ANNOUNCES FARGO SALES OFFICE

Trane Co. has announced the establishment of a sales office in Fargo, N.D. Prior to this time the company's Fargo quarters had been a sub-division of the St. Paul office.

George W. Robbins has been promoted to office manager.

Handy Tube Bender

Smoothly Bends ANY Pipe or Tubing



• Just a twist of the wrist assures perfect, even bends . . . right-angle, any angle. U and offset—every time. Eliminate need for els. No more guesses—no kinks! Save enough time, labor and money on ONE job to pay for your Handy Bender.

See your supply house—or write for free folder today.

HOLSCLOW BROS., INC.
430 N. WILLOW ROAD—EVANSVILLE, IND.

Water-Cooled CONDENSERS

Widely known for fine performance and supreme dependability. Rated capacity under all operating conditions. Capacity charts available.

U.L. or A.S.M.E. tagged
**1/4 Ton to 15 Ton
FOR EVERY
REQUIREMENT**

Liquid RECEIVERS

Vertical and horizontal receivers designed especially for use where space is limited. All are rugged, and moderately priced. U.L. or A.S.M.E. tagged. Constructed of heavy gauge tube with elliptical dished ends submerged—arc-welded to shells.

Adjustable Capillary Valves

EASY TO INSTALL
CLEANABLE
EASY TO ADJUST
BUILT TO LAST
Capacities
1/20 to 1 H.P.

Replaces high and low-side floats, capillary valves and automatic expansion valves. Operates with most refrigerants and requires no receiver in the system.

Write for our NEW Catalog Today

STANDARD REFRIGERATION CO.

Office: 332 S. Wayne, Dept. 8, Chicago 12, Ill.
Factory: 3529 Fillmore Street, Chicago 24, Ill.

Circle No. 115 on Reader Service Card
& AIR CONDITIONING • NOVEMBER, 1957

OPPORTUNITIES

(Classified Advertising)

Rates for "Positions Wanted," \$4.50 minimum, limit 25 words. For all other classifications, \$8.00 minimum for 25 words or under, each additional word 20¢. Boldface type or all capitals, \$10.00 minimum for 25 words or under, each additional word 25¢. All classified advertising payable in advance.

POSITION AVAILABLE

QUALIFIED COMMERCIAL REFRIGERATION AND AIR CONDITIONING SERVICE MEN. PLENTY YEAR ROUND WORK—TOP PAY SCALE. HUSSMANN—FRIGIDAIRE EXPERIENCED PREFERRED. WHITE DISTRIBUTING COMPANY, 907 E. FIRST ST., WICHITA, KANSAS.

BELL & GOSSETT BUYS MARBLE CORPORATIONS

Bell & Gossett Co. has acquired controlling interest in the Marble Corporations of Gladstone, Mich. There are three Marble firms involved in the transaction.

One of the principle benefits for Bell & Gossett from the deal is the Marble line of electric motors. These motors range in size up to 125 hp.

The newly formed board of directors for the Marble organizations consists of: C. E. Pullum, executive vice president of B & G; R. E. Moore, B & G president; H. A. Lockhart, vice president in charge of engineering; A. T. Woerthwein, comptroller; John Greene, vice president, First National Bank of Escanaba; John Zerbel, president, Marble Corporations; and W. M. Marble, Marble vice president.

Pullum has been elected chairman and chief executive officer of the company.

CALIFORNIA READERS NOTE

Our October issue carried an announcement of the appointment of C & S Equipment Co., Los Angeles, as "exclusive representative for Drayer-Hanson equipment in southern California".

We have since been informed that C & S will handle only Drayer-Hanson's refrigeration equipment. Air Conditioning Supply Co., also of Los Angeles, continues as sales agent in this territory for the D-H line of air conditioning equipment.

See Our Exhibit
1916 EXPOSITION
**AIR-CONDITIONING
& REFRIGERATION
INDUSTRY**
INTERNATIONAL AMPHITHEATRE
CHICAGO
NOV. 18-21, 1957

**FEATURING
Relief Valves**
all A. S. M. E. approved.
More than 30 sizes
to fit all
installations

the latest design in
Heat Exchangers
with more capacity
for size than any
economizer
in use today

plus the exciting
888 Hermetic Eye
...the only proven fused
glass-to-metal sight
glass on the
market today

Superior
valve & fittings co.
pittsburgh 26, pa.

Circle No. 114 on Reader Service Card

INDEX OF ADVERTISERS

A

Aerovox Corp.	26
Airserco, Inc.	134
Airtemp Div., Chrysler Corp.	63
Alco Valve Co.	1
Allen-Bradley Co.	121
Allied School of Mechanical Trades	134
Allin Mfg. Co.	131
American Automatic Ice Machine Co.	36
American Brass Co.	14, 42-43
American Gas Machine Co.	119
Amprobe, A Div. of Pyramid Instrument Corp.	45
Anderson Chemical Co.	135
Anemostat Corp. of America	129
Armstrong Cork Co.	40
Aurora Pump Co.	114

B

Bacharach Industrial Instruments	118
Baltimore Aircoil, Inc.	111
Beach-Russ Co.	141
Bell & Gossett Co.	57
Bendix-Westinghouse, Evansville Div.	12
Betz Div., Bohn Aluminum & Brass Corp.	75
Binks Mfg. Co.	4

C

Calgon, Inc.	15
Century Electric Co.	10
Chemical Solvent Co.	143
Coldin Cabinet Co., Inc.	56
Commercial Credit Corp.	31
Copeland Refrigeration Corp.	Cover 2
Cornell-Dubilier Electric Corp.	105
Curtis Mfg. Co., Refrigeration Div.	49

D

Detroit Controls Corp.	123
Dole Refrigerating Co.	88
Dow Chemical Co.	58
Drayer-Hanson, Div. of National-U.S. Radiator Corp.	115
Dunham-Bush, Inc.	33-34
E. I. du Pont de Nemours & Co., Inc., Freon Products Div.	133

E

Eastern Industries, Inc.	120
Electric Auto-Lite Co., Industrial Thermometer Div.	103
Evans Mfg. Corp.	116

F

Flexible Tubing Corp.	35
Flexonics Corp.	143

Frankell Mfg. Co.	131
Freon Products Div., of E. I. du Pont de Nemours & Co., Inc.	132
Frick Co.	127
Friez Instrument Div., Bendix Aviation Corp.	27
Frigid-Igloo Mfg. Co.	8

G

General Chemical Div., Allied Chemical & Dye Corp.	24-25, 103, 139
General Electric Co.	38-39
Goodyear Tire & Rubber Co.	5

H

Halstead & Mitchell	62
Sam Hammer, Inc.	126
Hansen Mfg. Co.	20
Henry Valve Co.	7
Highside Chemicals, Inc.	23
Holsclaw Bros., Inc.	145

I

Imperial Brass Mfg. Co.	19
-------------------------	----

J

Jamison Cold Storage Door Co.	117
Jarrow Products	107

K

Kenmore Machine Products Co.	52
Kerotest Div., Miller Printing Machinery Co.	59
Koppers Co., Inc.	101
Kramer-Trenton Co.	60

L

LaCrosse Cooler Co.	102
Lake Chemical Co.	102
Larkin Coils, Inc.	98
Lehigh Mfg. Co.	109
Linde Co., Div. of Union Carbide Corp.	139
Liquid Freeze Corp.	141

M

Madden Brass Products Co.	135
Jas. P. Marsh Corp.	100
McCabe-Powers Auto Body Co.	48
McIntire Co.	124
McQuay, Inc.	37
Milwaukee Electric Tool Corp.	102, 106
Minneapolis-Honeywell Regulator Co.	46
Goodloe E. Moore, Inc.	118

Mueller Brass Co.	41
F. E. Myers & Bro. Co.	91

N

National-U.S. Radiator Corp.	21
Niagara Blower Co.	113
Nibco, Inc.	22
Nor-Lake Co.	131

P

Penn Controls, Inc.	64
Perolin Co.	9
Pinnacle Equipment Corp.	47

R

Ranco, Inc.	16-17
Reading Tube Corp.	11
Refrigeration Appliances, Inc.	106
Revere Copper & Brass Co.	80

S

C. Schmidt Co.	137
Sealed Unit Parts Co.	126
Sedco, Inc.	113
Sporlan Valve Co.	44, 61
Square D Co.	53
Standard Refrigeration Co.	145
Stic-Klip Mfg. Co.	113
Superior Valve & Fittings Co.	145

T

Taylor-Burch Refrigeration Products, Inc.	32
Tecumseh Products Co.	29
Temprite Products Corp.	116
Trane Co.	54-55
Tube Manifold Co.	2

U

Union Carbide Corp., Linde Div.	139
United Cork Cos.	51
United Wire & Supply Co.	6

V

Viking Copper Tube Co.	Cover 3
Virginia Smelting Co.	28, 84

W

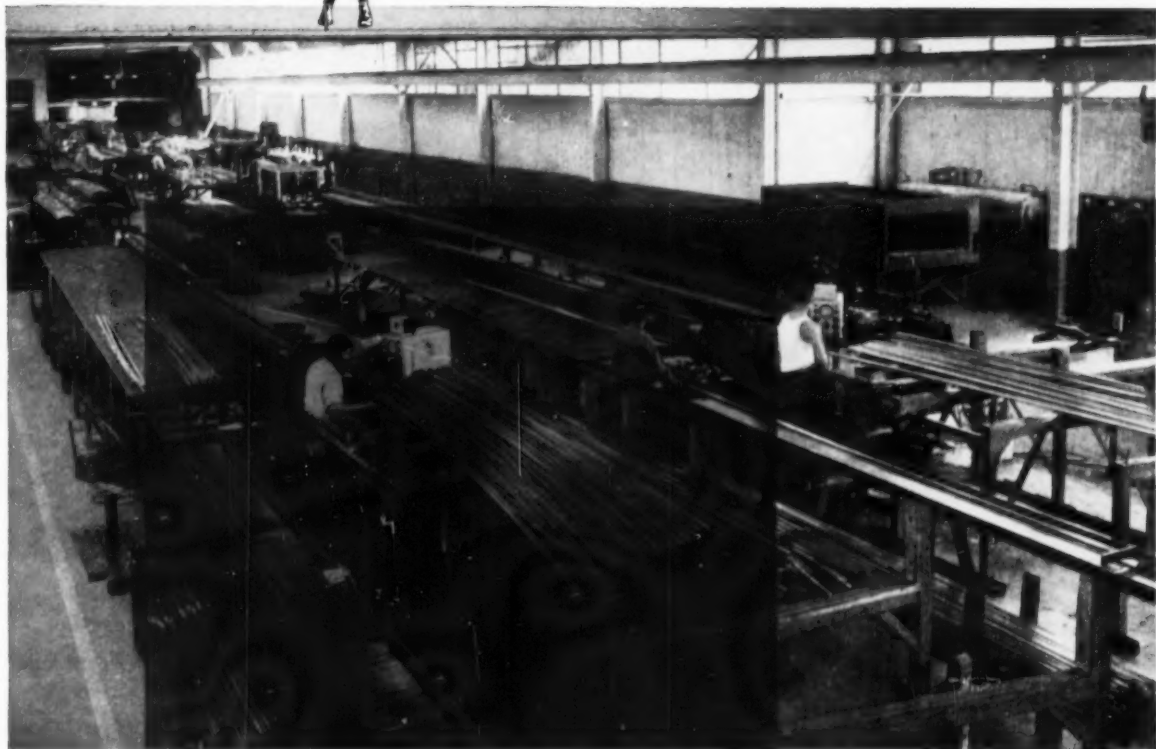
Wagner Electric Co.	125
Watsco, Inc.	50
A. H. Witt Co.	137
Wolverine Tube Div., Calumet & Hecla	30

Y

York Corp.	13
------------	----



design for finish



STRAIGHT LINE PRODUCTION **TO A PERFECT FINISH**

EXTRA WORKABILITY

The proper kind of temper is vital in tube used for refrigeration and air conditioning purposes. VIKING Copper Tube has been produced with the best available annealing and tempering equipment, thus assuring perfect fabricating.

ABSOLUTE, UNVARYING STRAIGHTNESS

A battery of straightening machines keeps VIKING Copper Tube absolutely, unvaryingly straight. In addition, these machines precisely temper the tube, imparting to it the correct surface hardness . . . assuring ease in fabrication resulting in substantial savings in time and labor.

ELECTRONIC QUALITY CONTROL

An electronic "Brain" detects the minutest flaw or imperfection in the walls of VIKING tubes . . . automatically discarding defective tubes. Trouble-free fabrication is virtually guaranteed — operational failures almost completely eliminated.

Drawing techniques which produce copper tubes of highest quality are only part of the story of VIKING'S craftsmanship. The finishing bay takes over after all drawing operations have been completed.

Thin wall tube moves first through the electronic flaw detectors and through a preliminary straightening. Careful inspection at this point eliminates defects.

Tempering operations, cutting to specified length, de-burring and special cleaning all take place in this area before the final inspection and packaging.

Thin wall tempered tube is our business and we *know* our business.

Visit

BOOTH No. 312
10th EXPOSITION

Air Conditioning and Refrigeration Industry
NOV. 18 TO NOV. 21 • CHICAGO, ILL.



VIKING COPPER TUBE CO.

CLEVELAND 10, OHIO

PRECISION DRAWN SEAMLESS COPPER TUBE

Circle No. 2 on Reader Service Card

Jenni Genetron says,

"HERE'S THE RIGHT REFRIGERANT FOR EVERY NEED!"



Selected Physical Data
(Performance based on 5° F evaporator
temperature and 86° F condenser
temperature)

genetron® SUPER-DRY
REFRIGERANTS

Trichloromono-fluoromethane

Dichlorodifluoromethane

Monochlorodifluoromethane

Trichlorotrifluoroethane

Dichlorotetrafluoroethane



	genetron 11 ORANGE LABEL	genetron 12 WHITE LABEL	genetron 22 GREEN LABEL	genetron 113 PURPLE LABEL	genetron 114 DARK BLUE LABEL
Chemical Formula	CCl_3F	CCl_2F_2	CHClF_2	$\text{C}_2\text{Cl}_3\text{F}_3$	$\text{C}_2\text{Cl}_2\text{F}_4$
Molecular Weight	137.4	120.9	86.5	187.4	170.9
Boiling Pt. (°F) at 1 Atm. Pressure	74.7	-21.6	-41.4	117.6	37.6
Evaporator Pressure at 5° F (p.s.i.g.)	24.0*	11.8	28.3	27.9*	15.6*
Condensing Pressure at 86° F (p.s.i.g.)	3.6	93.3	159.8	13.9*	22.7
Freezing Point (°F) at 1 Atm. Pressure	-168	-252	-256	-31	-76
Critical Temperature (°F)	388	234	205	417	294
Critical Pressure (p.s.i. absolute)	635	597	716	495	478
Compressor Discharge Temperature (°F)	112	101	131	86	88
Compression Ratio (86° F/5° F)	6.24	4.08	4.06	8.02	5.33
Specific Volume of Saturated Vapor at 5° F (cu. ft./lb.)	12.27	1.46	1.25	27.04	4.04
Latent Heat of Vaporization at 5° F (B.t.u./lb.)	84.0	68.2	93.6	70.6	60.2
Net Refrig. Effect of Liquid—86° F/5° F (B.t.u./lb.)	67.5	50.0	69.3	53.7	43.0
Specific Heat of Liquid at 86° F (B.t.u./lb.°F)	0.21	0.24	0.34	0.22	0.23
Specific Heat of Vapor at Constant Pressure of 1 Atm. & 86° F (B.t.u./lb.°F)	0.13	0.15	0.15	0.15	0.16
Specific Heat Ratio at 86° F & 1 Atm. (k = Cp/Cv)	1.14	1.14	1.18	1.09	1.01
Coefficient of Performance	5.09	4.70	4.66	4.92	4.60
Horsepower/Ton Refrigeration	0.927	1.002	1.011	0.960	1.025
Refrigerant Circulated/Ton Refrig. (lbs./min.)	2.96	4.00	2.89	3.73	4.65
Liquid Circulated/Ton Refrig. (cu. in./min.)	56.0	85.6	68.0	66.5	88.7
Compressor Displacement/Ton Refrig. (c.f.m.)	36.32	5.83	3.60	100.76	18.78
Toxicity (Underwriters' Laboratories Group No.)	5A	6	5A	4.5	6
Flammability & Explosivity	None	None	None	None	None

*Inches of mercury vacuum.

COMPARE! Careful control at every step in the manufacture of "Genetron" Super-Dry Refrigerants results in products of highest purity, which are extremely low in moisture content and other undesirable impurities. Quality of current production consistently surpasses the rigid manufacturing specifications for these products. Write for important informative folder "Genetron Super-Dry Refrigerants."

SEE YOUR WHOLESALE

or write or call

genetron DEPARTMENT

GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 Rector Street, New York 6, N. Y.

